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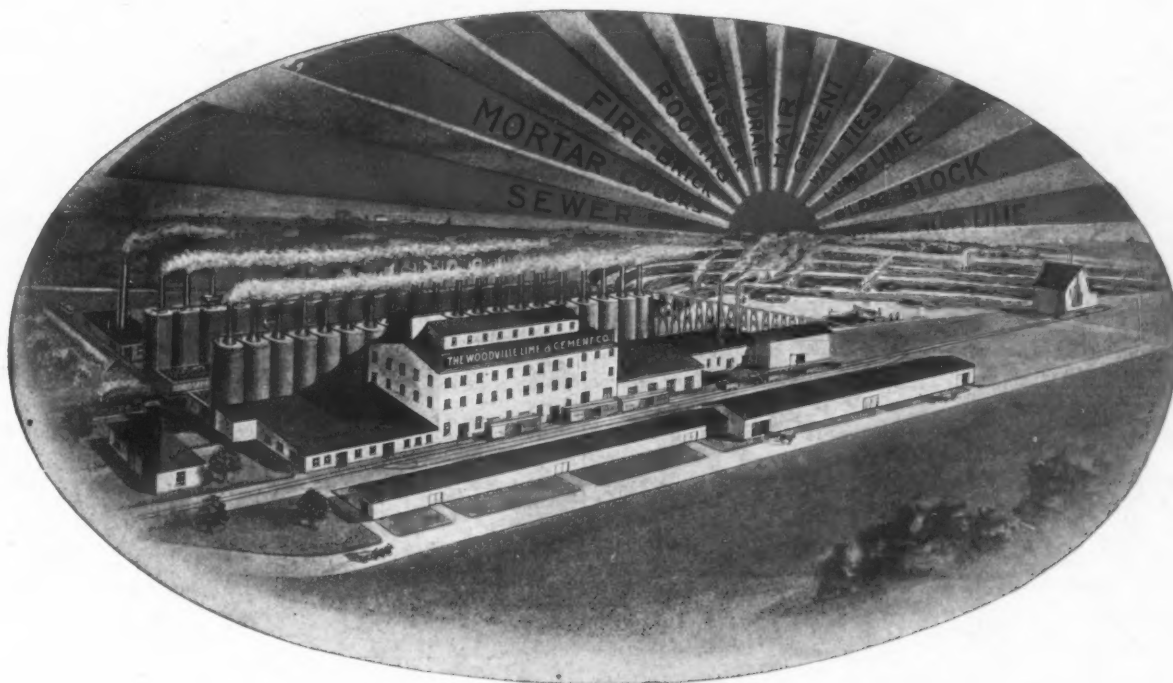
# Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XIV.

CHICAGO, ILL., JUNE 7, 1914.

Number 3.



## "THE BEST UNDER THE SUN"

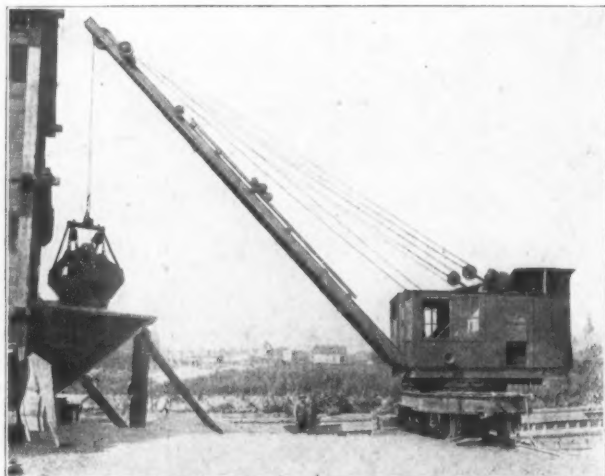
MANUFACTURERS OF

White Enamel Finish Hydrated Lime  
White Lily Finish Hydrated Lime  
Polar Bear "Alca" Stucco  
Enamel "Alca" Plaster  
Lump Lime

WHOLESALEERS OF

Hard Wall Plaster  
Keene's Cement  
Mortar Colors  
Sewer Pipe  
Roofings

**The Woodville Lime & Cement Company**  
1341-50 Nicholas Bldg., Toledo, Ohio



**There is a Quicker and Better Way**  
of handling Sand, Gravel, Crushed Limestone, and kindred materials.  
It's more economical too.

*It's the*

**"McMyler Interstate Way"**

The McMyler Interstate Crane shown above is owned and operated by the Artesian Lime & Stone Company. It is fitted with our Multi Power Bucket and the photo shows it handling crushed limestone. We've solved a good many of our customers' problems. Can't we help you with yours?

**The McMyler Interstate Co.**

Dept. P-1, Cleveland, Ohio.

London

New York

Chicago

## THE WHITACRE FIREPROOFING CO.

Manufacturers and Erectors of

### Hollow Tile Fireproofing

The Largest Independent Manufacturers of Hollow Tile Fireproofing in the United States.

All our Ohio Product is Manufactured from Pure Ohio Fire Clay.

All Size Partitions, Jumbo and Hollow Brick.

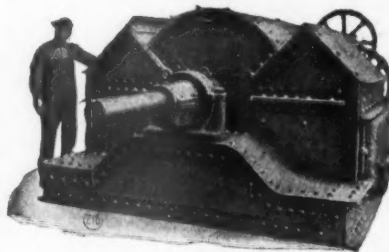
Our heavy Dove Tail Hollow Blocks are designed especially for fireproof residences with stucco finish. They are suitable for any part of the building and are adapted to the various architectural designs.

**Without Our Estimate You Have  
No Competition**

General Office: Waynesburg, Ohio

Chicago Office: Sales Department, 538 So. Dearborn St., Chicago, Ill.  
Factories: Waynesburg, Ohio; Malvern, Ohio; Chicago Heights, Ills.

## "PENNSYLVANIA" HAMMER CRUSHERS



For Pulverizing Limestone, Lime, Cement Rock, Marl, Shale, Etc.

Main Frame of steel, "Ball and Socket" Self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running. No other hammer Crusher has such a big Safety Factor.

**PENNSYLVANIA CRUSHER CO.**  
Philadelphia  
New York Pittsburgh



**"HERCULES"**

For underground masonry, cisterns, reservoirs, pits, coal and grain pockets.

Watertight, sanitary, hard and dustless floors.

Used with sand and cement to produce a waterproof mortar which will bond perfectly to new or old masonry and permanently waterproof, even if plastered on the inside of a cellar, where the water pressure is outside.

Hercules Colored Coatings; Plaster-bond and Damp-proofing Mastic.

**WATERPROOFING**  
**HERCULES WATERPROOF CEMENT CO.**  
BUFFALO, NEW YORK



## Service

"Service" is the biggest word in the Building Material Business.

"Wheeling" Wall Plaster quality has been proven long ago. Now we want to prove our "SERVICE."

**Wheeling Wall Plaster Co.**  
Wheeling, W. Va.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS











## Medusa Pure White Portland Cement

[[USED IN THE CONSTRUCTION OF  
MANHATTAN PLACE, LOS ANGELES, CALIFORNIA

FRANK H. TYLER, Architect

H. H. BELDEN, Builder

Medusa White Portland is unexcelled for building ornamentation, stucco, concrete building blocks, interior decoration, statuary, cemetery work, parks and grounds, tile, mosaic, setting marble, limestone or brick, etc.

### MEDUSA IS THE FIRST TRUE WHITE PORTLAND CEMENT EVER MANUFACTURED

*Medusa White Portland Cement can be used for exterior as well as interior work, is perfectly white in color and stainless. Guaranteed to be a high testing Portland, passing standard specifications. Medusa has been used by the U. S. Government in over 60 buildings in the past few years, and also in work on the Panama Canal, and shipments have been made to all parts of the globe.*

WRITE FOR ILLUSTRATED AND DESCRIPTIVE BOOKLETS AND SAMPLES

**Sandusky Portland Cement Company**  
SANDUSKY, OHIO



## Mr. Dealer!

### FIREPROOFING

It will pay you to handle our "Minerva" fire clay hollow tile **FIREPROOFING** — it's the best made, and our shipments will please you.

Get our prices on our 4x5x12 and 5x8x12 Backup Block and also on our various sizes of partition tile.

We have a nice stock on hand for immediate shipments.

**The Metropolitan Paving Brick Co.**  
Canton, Ohio

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

**G**OOD Portland Cement isn't hard to use; it mixes easily, sets well and gives everlasting service.

## Marquette Portland Cement

is that kind. It serves the user, as carefully as we serve the dealer.

Dealers get best satisfaction in both buying and selling when they handle Marquette Portland Cement.

The green guarantee tag on every bag of Marquette Portland Cement means we have made it better than government specification; as much better as possible. Look for the Green Tag.

We have an interesting book on "Concrete Roads and Pavements;" it's free, send for it.

Marquette Cement Mfg. Co., Chicago,  
1335 Marquette Building.

## NORTH-WESTERN PORTLAND CEMENT



The Reliable Portland Cement

A Portland Cement for the  
NORTHWEST

**North-Western States Portland  
Cement Co.**  
MASON CITY, IOWA

## NOW READY DIRECTORY FOR 1914

Cement, Gypsum and Lime Manufacturers  
NEATLY BOUND VEST POCKET SIZE

**\$1.00 Postpaid**

**FRANCIS PUBLISHING COMPANY**  
537 So. Dearborn St., CHICAGO



It is a fact that the contractors who are using the most "CHICAGO AA" Portland Cement, are the ones who have been using "CHICAGO AA" longest.



No. 6-O, for outside corners with 6-inch siding. Made also for 4-inch and wide bungalow siding.

**SAVE \$40.00  
BY SPENDING \$14.00**

That's what one wide awake lumber dealer did on a house he built last summer.

### KEES METAL BUILDING CORNERS

(Used in Place of Corner Boards)

**Made This Saving in Labor Possible**

Still he got a better job. Send today for photograph of the house and others finished in the same way.

CARPENTERS RIGHT IN YOUR TOWN are reading about Kees Metal Building Corners in the Building Age, National Builder and American Carpenter and Builder. They'll be asking you for prices.

Get the facts—be ready.

A card will bring free samples  
and prices

**F.D. KEES** MFG. CO. BEATRICE, NEB. Box 324



No. 6-A, for inside angles

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

PETER MARTIN, Pres. &amp; Gen. Mgr

LIUS M. MARTIN, Asst. Gen. Mgr.

**Capital \$1,500,000****THE OHIO AND WESTERN LIME CO.**

Manufacturers and Wholesale Dealers in

**Ground Lime, Lump Lime, Fertilizer, Rock Wall Finish, Hydrated Lime, Cement, Plaster, Hair, Etc.****CAPACITY 8000 BARRELS PER DAY**

We have large stone crushers at various places. We make a Magnesia and high Carbonate of Lime. All of these limes are the very best on the market.

**THE LARGEST IN THE WORLD**

**WORKS AT** Huntington, Ind.; Fostoria, O.; Gibsonburg, O.; Sugar Ridge, O.; Tiffin, O.; Genoa, O.; Limestone, O.; Lime City, O.; Portage, O.; Marion, O.; Bedford, Ind.

**OFFICES AT**

Huntington, Ind.

Marion, Ohio.

**BE A MONARCH MAN**

Where building laws are stringent and inspectors super-critical, Monarch Hydrate has never failed to pass successfully all required tests and save the builders vast sums of money and an immense amount of time. Time is an important item—Why waste it? We invite you to join the procession of joyful, satisfied, money-saving users of MONARCH HYDRATED LIME. We Ship Sudden.

**THE NATIONAL LIME & STONE COMPANY**  
CAREY, O.

**BANNER HYDRATE LIME**

Stands for the Four Important Essentials:

Best for Mason's Mortar

Best for Lubricating Plaster Mixtures

Best for Finest White Finishing Coats

Best for Cool Working Chemical Reactions

**NATIONAL MORTAR AND SUPPLY CO.**

A. H. LAUMAN, President

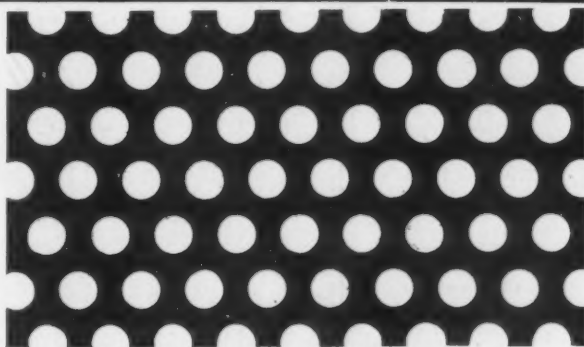
PITTSBURGH, PA.

**PERFORATED METALS**

Our Perforated Products have a reputation for accuracy and general high quality, shipments are prompt, and prices the lowest.

Our plant is equipped with modern perforating machinery, and we specialize in this product, elevators and conveyors, and SIMPLEX RIVETLESS CONVEYOR CHAINS.

WE SOLICIT YOUR INQUIRIES



**CROSS ENGINEERING CO.**  
CARBONDALE, PA.

**SCREENS****For Every Purpose**

Revolving Screens

Conical Screens

Shaking Screens

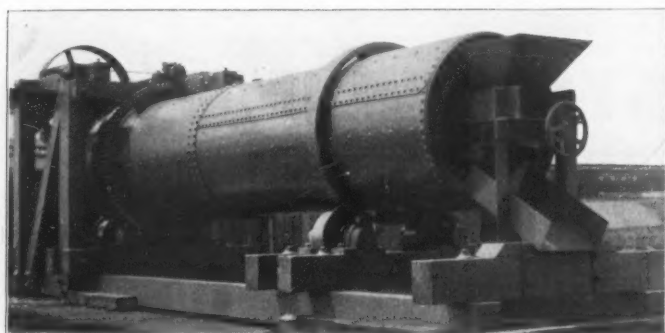
FOR:

Stone, Gravel, Sand, Cement, Lime, Coal, Coke, Steel Floors and Gratings, Grilles and Ventilators, Fire Escape Platforms, Etc.

SEND FOR ILLUSTRATED CATALOG

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS





## A Severe Test in Sand Washing

was recently made, in which the engineers in charge reported as highly satisfactory. The material washed contained a bonding substance consisting of clay and other ingredients which were *eliminated* by this washer.

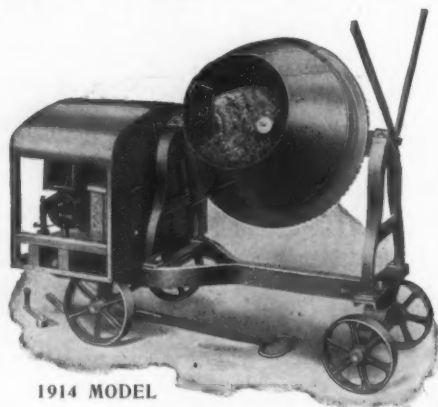
*Let us tell you more about this and similar tests.*

**The Raymond W. Dull Company**  
Conway Building, CHICAGO

## STOP! LOOK! LISTEN!

JUST THE MIXER YOU'VE BEEN WISHING FOR

### The BIG-AN-LITTLE



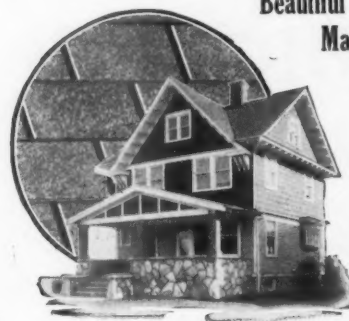
Just a Little Bit Better Than The One You Thought Was Best

The small mixer has proved its worth. Contractors see that it pays better to have one or more small portable Mixers, than to mix by hand or to have a great big clumsy Mixer. The question has been to get a Dependable Small Mixer at a Low Price.

The Big-an-Little is the biggest and best small Mixer on Earth and our Low Prices amaze the Mixer world.

Your neighbor has one. They are used everywhere. Ask him. Write us NOW for full particulars.

**JAEGER MACHINE CO.,** 219 W. RICH STREET  
COLUMBUS, OHIO  
A-1 Catalog



## Beautiful Houses from Illinois to Massachusetts are Roofed with Reynolds Flexible Asphalt Shingles

A multitude of pretentious residences in a score of states are giving ample proof of the long-lasting surface of Reynolds Flexible Asphalt Shingles.

Every type of modern home can be protected and beautified, at lower cost, with these time-

tried, weather-tested shingles. They withstand the ravages of driving rain, pelting hail, hottest sun and heaviest snow without warping, cracking, splitting, curling or blowing off. Sparks cannot set them on fire. Long Exposure cannot dull their rich color. Adaptable to every style of pitched roof, and make possible unusual architectural effects, such as roll edges, thatch effects and rounded corners.

## Reynolds Asphalt Shingles

Guaranteed for 10 years—will wear many years longer—  
Write for liberal agency proposition.

Rough-surfaced weather defiers made of crushed slate or granite securely embedded in pure Asphalt. Natural colors of garnet, red or gray-green which *never fade and never need painting*. We are the original makers of flexible asphalt slate shingles and tested them for ten years before putting them on the market. They are uniform in size—8 ins. by 12½ ins.—and are laid 4 ins. to the weather. Easily and quickly laid.

Let us send you a booklet showing photographs of modern houses roofed with Reynolds Asphalt Shingles. Write for a copy TODAY

**H. M. REYNOLDS ASPHALT SHINGLE CO.**  
Original Manufacturer Grand Rapids, Mich.  
Established 1868 Members of National Builders' Supply Association

## Best Bros. Keene's Cement

*The Plaster That Stands  
Hard Knocks*

The permanent plaster for interior walls.

May be rettempered as often as necessary.

Makes a perfect bond on concrete, brick, tile or lath.



**The Best Bros.  
Keene's Cement Co.**

Established 1889  
Dept. A, Medicine Lodge, Kansas  
NEW YORK CHICAGO

## "It Counts 'em and Bundles 'em"



Securely ties cement or plaster bags with 3 wires. Counts and rings bell when correct number of bags are in.

**Saves Time  
Eliminates Error**

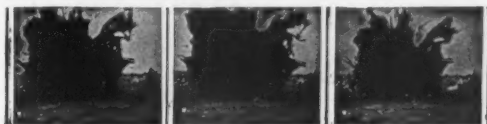
Price \$30.00, f. o. b. Cleveland, O. It pays for itself in a short time.

Order Now

**The Faerberhill  
Manufacturing Co.**  
1401 Columbia Building  
Cleveland, O.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

## Which is the Cheaper and Better Way?



6 small bench shots like this—each one stopping work of the steam shovels, dinky engine crews and cars—and laborers.



OR One big face blast—one stop for shovels, engine crews and cars as done by



## Special Blast Hole Cable Drills

### A FEW WORDS ON BLAST HOLE DRILLING

Economical blast hole drilling is a matter of getting the greatest footage of hole drilled in the shortest time with the least possible cost. The blow of the falling string of tools is the real

factor in the case, and upon the conditions surrounding the action of the drilling tools depends the economy of the process. With a given weight of tools, the speed of drilling depends upon the length of the stroke, to be more exact, the actual height of drop of the tools, and the number of strokes per minute which can be freely made. These two conditions are vital to rapid and efficient blast hole drilling and are made nearly 100 per cent efficient in the "Special Armstrong Blast Hole Drill."

This is how we do it:

The "Special Armstrong Blast Hole Drill" embodies an important feature of design not found in any other type of cable drill made today, which makes possible the wonderful records which it is achieving in quarries throughout the country. The above mentioned improvement lies in the straight crank motion of the spudding beam and the proper location of the spudding sheave. It eliminates the "whipping" of the cable, it increases the lift of the tools on each stroke and makes possible a greater number of strokes per minute for a given crank throw and gives an absolutely free drop to the tools. In other words, it makes more efficient the two conditions which are required for rapid drilling, the greatest number of powerful blows; in other words, the maximum foot pounds of energy delivered at the bottom of the hole, within a time limit.

We can prove with authoritative records covering in detail periods of six months' duration that the increased efficiency of the Special Armstrong Blast Hole Drill is from 40 to 50 per cent over similar sized cable drills of other makes.

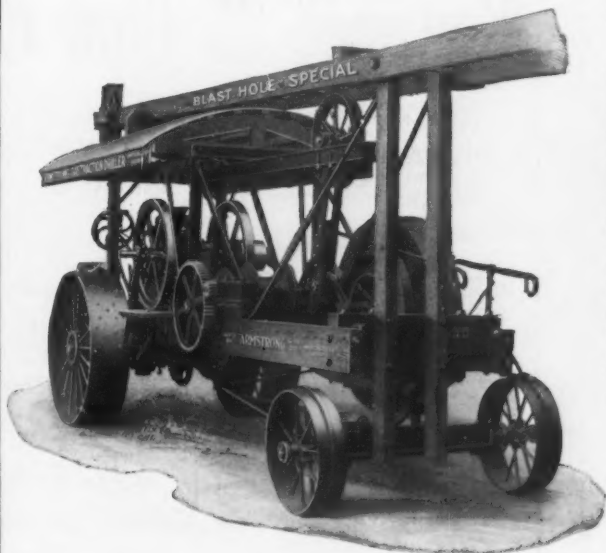
Fundamentally and finally, this machine is built for *BLAST HOLE* purposes only. It is not a well drill. We do not furnish it for any other purpose than drilling blast holes. Let us know your conditions and we *absolutely guarantee* an increased footage per day or over a long period at a lower cost.

Write for Bulletin E, giving data and records, and let us have an opportunity to prove our case.

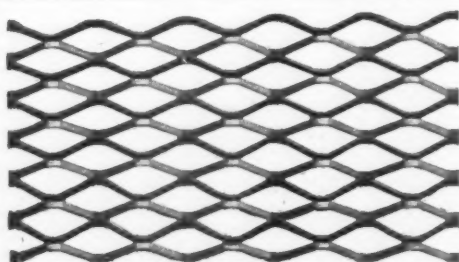
**ARMSTRONG MFG. CO.**  
Waterloo, Iowa, U. S. A.

Eastern and Export Office  
17 Battery Place  
New York City  
Canadian Branch: Drinkle Block No. 2, Saskatoon, Sask.

Western Branch  
3rd and San Pedro Streets  
Los Angeles, Cal.  
3rd and San Pedro Streets



Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

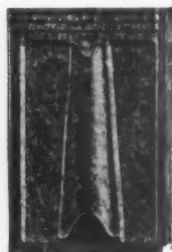


SYKES EXPANDED CUP LATH  
SELF-FURRING

HAS NO EQUAL FOR

### STUCCO WORK

Furnished with either an anti-rust (oil) coating, painted black or galvanized, packed in bundles containing 20 square yards, size of sheets 18x96 in.; in gauges 27, 26, 25 and 24.



### SYKES "IMPERIAL" SHINGLE.

SIZE 10 x 14 and  
14 x 20 INCHES.

We also manufacture all styles of roofing and siding, such as corrugated, v crimp, pressed standing seam, roll roofing, brick siding, weather board siding, beaded ceiling, etc.

## Sykes Metal Lath

Present opportunities for the dealers to double their sales in this line, as Architects are specifying and building contractors are using SYKES products.

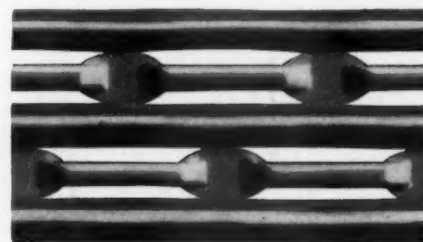
### BASIC REASONS

SYKES EXPANDED CUP LATH is self-furring. This greatly reduces the cost of construction on every building where it is used. It is more economical in the amount of plaster required than any other expanded lath. Quickly erected as both sides are alike, cannot be applied wrong.

SYKES TROUGH SHEET LATH is incomparable in its utility for inside plaster work. Can be used to great advantage on any kind of a building. Unusual design, strength and keying principle.

### WHY NOT HANDLE OUR PRODUCTS AND INCREASE YOUR PROFITS.

Write us at once for our SPECIAL EXCLUSIVE SALES PROPOSITION, SAMPLES, ETC.

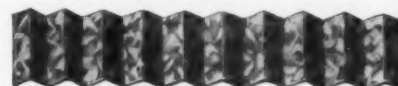


Sykes Trough Sheet Lath

The Strongest and  
Most Durable Lath Made

### Perfect for Interior Work

Furnished with either an Anti-Rust (oil) coating, painted black or galvanized. Size of sheets, 13½, 15½, 18½, 23½ in. wide by 96 in. long.



SYKES WALL TIE

Standard Tie 7 in. long

Veneer Tie 6 in. long

We also make Metal Corner Bead

**THE SYKES METAL LATH & ROOFING CO.,**  
508 Walnut Street, NILES, OHIO

Why

SPLIT YOUR METAL BUSINESS

when

### The "Bostwick" Line

Includes

METAL LATH, "TRUSS LOOP" AND  
EXPANDED,  
LIGHT REINFORCEMENT,  
CORNER BEAD, WALL PLUGS,  
WALL TIES.

Watch

your freight bills—they will show you a reason for ONE ACCOUNT where you can get the RIGHT goods at the RIGHT time for the RIGHT prices.

Bostwick  
?

FOR PROFITS  
AND SERVICE

is the name for the account.

DEALERS' SERVICE IS WORTH  
MUCH—COSTS NOTHING.

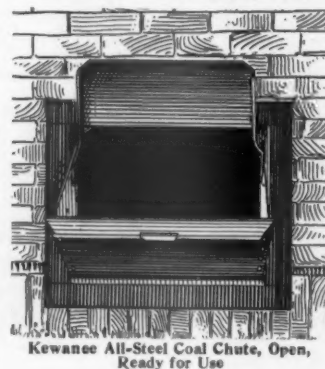
**The Bostwick Steel Lath Co.**  
NILES, OHIO

## Boost Your Profits

### Handling

### Kewanee All Steel Coal Chutes

They are absolutely the best protection for the coal room window on the market—constructed entirely of boiler steel they cannot break.



Kewanee All-Steel Coal Chute, Open,  
Ready for Use

You can easily sell them to the building trade and boost your profits. What's more, our co-operative advertising plan helps you do this.

Write for our agency proposition today.

**Kewanee Manufacturing Co.**  
KEWANEE, ILLINOIS

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS





This illustration shows one of four machines used by the Indiana Excavating Co., at Indianapolis, where a mile and a half boulevard is being constructed. The conditions are such that the slack cable-way system alone was adaptable. In investigating equipment for this work, capacity, power, cost of operation and maintenance were considered.

## NEGLEY PATENTED EXCAVATORS

PERFORM ALL SLACK CABLE-WAY OPERATIONS  
EFFICIENTLY AND ECONOMICALLY

**INFRINGERS WILL BE PROSECUTED.** Our Excavator is protected by U. S. Patents Nos. 1,053,428 and 1,086,304. Canadian Patent No. 151,915 and other patents are pending. We request Manufacturers and Purchasers to respect our rights. Infringement suits are now pending.

### INDIANAPOLIS CABLE EXCAVATOR COMPANY

Beauty Avenue and New York Street, INDIANAPOLIS, IND.

LELAND EQUIPMENT COMPANY, 126-128 Pine Street, San Francisco, Calif.  
Agents for Arizona, California and Nevada.

CHAS. T. TOPPING MACHINERY CO., Bessemer Bldg., Pittsburgh, Pa.  
Agents for Western Pennsylvania and West Virginia.

## BRICK—The Old Way of Handling Them is a Nuisance

In tossing brick out of a car many are broken. A wheelbarrow doesn't carry enough bricks to warrant the time it takes to load, wheel it out and dump it.



### Use a CLEVELAND BRICK CLAMP

*It is the Newest and Quickest Way*

Furthermore, in unloading brick it actually saves ONE-THIRD of the time over the old methods. This clamp is adjustable and will carry from FOUR to TWELVE bricks. There's no fuss or bother. Simply place the clamp down on the bricks and lift the handle.

The price? It is so inexpensive ANYONE can afford it. Just send your name on a postal and we'll send a neat catalog and price list.

THE P. D. CRANE COMPANY, 10201 Harvard Avenue, Cleveland, Ohio

# THE BELDEN BRICK CO.

Incorporated 1893

**Sales Offices:**

**CANTON, OHIO**



## FOUR MODERN FACTORIES

producing practically every color and texture of Face Brick put us in position to take care of the dealer to the best possible advantage. It will pay you to have our samples and prices. Write now.

### FACTORIES:

Canton, O.

Somerset, O.

Uhrichsville, O.

Tuscarawas, O.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



## Sell it for Scratch and Brown Coat too



This building is one of a thousand big jobs plastered throughout—scratch, brown and white coat with

### “Tiger Brand” Hydrated Lime

Don't forget this material makes a wall that is nearly sound proof, it spreads well, never works short, and can be darbied down to a straight, true wall.

Explain this to your customers when selling plastering material.



Second National Bank Building  
Toledo, Ohio  
D. H. Burnham & Co., Architects



**The Kelley Island  
Lime & Transport Co.**  
CLEVELAND, O.



### Standard Fire Brick Lined Cooler Doherty-Eldred Lime Kiln

### The Improved Equipment Co.

Executive and Sales Office: 60 Wall St., New York City

#### COMBUSTION ENGINEERS

Complete Lime Burning Plants  
Lime Kilns  
Complete Coal Gas Plants

Gas Producers  
Special Industrial Furnaces  
Refractory Materials

## Concrete's the Thing Lehigh's the Cement



Quality  
Quick Delivery  
Co-operation

### Lehigh Portland Cement Co.

12 Mills  
Over 12,000,000 Bbl. Capacity

Main Office:  
Allentown, Pa.

Western Office:  
Chicago, Ill.

## DEXTER Portland Cement THE NEW STANDARD

Sole Agents **SAMUEL H. FRENCH & CO.** Philadelphia



### SERVICE AND SALES BUREAU

First Aid to the

### ADVERTISERS and SUBSCRIBERS

Let Us Tell You More About It



IT WILL PAY YOU TO HANDLE THE MODERN FIRE PROOF  
BUILDING MATERIAL

We manufacture all sizes and shapes from the highest grade shale by the most modern process, including backing up, partition, floor arches and hollow brick; also DRAIN TILE.

**AMERICAN CLAY CO.**  
25 So. Seventh St., TERRE HAUTE, IND.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



# Rock Products and BUILDING MATERIALS

INCORPORATING DEALERS BUILDING MATERIAL RECORD

Volume XIV.

CHICAGO, JUNE 7, 1914.

Number 3

PUBLISHED SEMI-MONTHLY.

DEVOTED TO

Quarry Products, Cement, Lime, Plaster, Sand and Gravel, Clay Products and Building Specialties—Fireproof Building and Road Construction.

THE FRANCIS PUBLISHING COMPANY.

EDGAR H. DEFEBAGH, Prest.

Seventh Floor, Ellsworth Bldg., 537 So. Dearborn St., Chicago, Ill., U. S. A.

Telephone: Harrison 8086, 8087 and 8088.

EDITORS:

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GEORGE A. OLSEN, Editor Retailers' Section. F. G. PULLEY, Associate Editor.

H. F. AKE, Secretary.

DRUSUS H. NICHOLS, Advertising Manager.

Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.

Every reader is invited to make the office of Rock Products and Building Materials his headquarters while in Chicago.

Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions ..... \$1.00  
In all other Countries in the Postal Union ..... \$1.50  
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.  
Advertising rates furnished on application.

Published on the 7th and 22nd of each month.

Entered as second-class matter July 2nd, 1907, at the Postoffice at Chicago, Illinois, under act of March 3rd, 1879.

Co pyright, 1914, by E. H. Defebaugh.

Lime manufacturers should get active at this time of the year with the agricultural branch of their activity, for half the lime produced could easily be used by the farmers profitably.

If the dealer will just tell his contractor customer to soak hydrated lime over night in the mortar box or in a barrel to one side the day before it is to be used, he will confer a favor on his customer, because the putty derived from the hydrated lime will be the most gratifying material on the job the next day.

Just about the best talent in the state of New Jersey has been conscientiously working on a new lien law for that state. The president and secretary of the New Jersey dealer's association have been prominently connected with the work of drafting the measure and when it becomes a law in the near future it will be a model for such instruments.

The solution of the road builders' problems has come with the tractor trains to do the hauling by machinery. That old-fashioned teaming proposition has always been the tragedy of road efforts, costing more money to get the material to the road than all the other bills combined. Tractor trains hauling 50 or even 100 tons of road material are not only possible but are practical and at work.

Of all the rate makers of the public utilities that we know anything about, probably the fire insurance bunch is more nearly on the square than any other. They are always open to investigation and have recognized concrete as the best fireproofing material known and would promptly give the public the benefit to be derived from concrete construction if only the people would insist upon concrete construction in such a measure as to make it recognizable in the essentials of the construction of the average house.

It is not always the busiest man who is doing the most in these hot days when every pulsation counts; just try to do it without fidgeting and it will be easier.

Plaster partition blocks and plaster board are two products which every dealer in building materials should carry and push as coming products which will make big future business.

The sand-lime brick manufacturers report a very active season; in fact, the recognition of sand-lime brick is growing steadily year by year as one of the indispensables of modern construction.

Metal lath and expanded metal have become indispensable for many uses in the finishing of the DeLuxe building jobs of the present time. When used as reinforcements for concrete hearths in corners, angles and a score of other places, these goods made from large sheet metal have proven their efficiency.

The great Chicago market is wide open and running at breakneck speed to catch up for the three months of tieup. There was neither rant nor reason in the tieup, and now that it is over we are all ready to forget the causes, real and pretended; and to the causes we are all saying, "Please don't let it happen again soon."

The automobile trucks for city delivery are most in demand in these hot days when the efficiency of the horse is at its lowest ebb. If the truck builders get active now they will find their customers in a receptive mood to their arguments. The dealers who have adopted the auto truck and used it intelligently are giving it unstinted endorsement.

The first essential of every building is to have it tight roofed. The time-honored shingle is getting worse and worse and higher and higher in cost. Improved modern roofing materials are the sensible study for every prospective builder in these times. The dealer who is a business builder is always prepared to recommend modern improved roofing materials from the stock he carries. No dealer's stock is complete without efficient roofing representation.

The popularity of plastered exterior which is made possible by the use of Portland cement will continue to grow by reason of the inherent merits of the material, together with the public appreciation of beauty which can be accomplished by the use of mortar colors and waterproofing ingredients, easy for the mechanic to handle and giving a result far superior to the dimensions which any additional cost might suggest. In fact, the most effective results in color can be obtained without any appreciable additional cost.

Unsettled Washington has unsettled business and consequently the investors are slow in taking hold of building projects, and that makes plentiful money in the bank because the active men don't want to use it. That puts employment "on the bum," so that for the most part unsatisfactory business conditions prevail; but everybody is striving to help the situation and it would be easy to have half of a very good season yet if the combined efforts of the best business men of the country can get things around to a steady understanding.



News About People and  
Things of Importance

## With You and Me

Comments of Interest  
to the Trade

Most of the fertilizer manufacturers will recognize the accompanying photograph of Ole Christensen, who, for 15 years, has been closely identified with the fertilizer industry as millwright and mechanical engineer in the employ of grinding mill manufacturers. He has recently entered the employ of the Sturtevant Mill Co., the well-known manufacturers of the "Ring-Roll Mill," "Newaygo Separator" and other machinery used in fertilizer plants. He will act in the capacity of salesman and engineer-millwright, and will travel extensively among the fertilizer manufacturers as heretofore, with a greatly increased line of machinery. Mr. Christensen is highly popular among the users of pulverizing machinery, for his proverbial honesty and frankness begets confidence, and those who accept his advice seldom regret it, for his long and varied experience as grinding mill expert has taken him into nearly every plant in this country, and many abroad, so that he is qualified to judge the best and latest methods of mill practice and installation. Few people have had this experience, and his present employers are indeed fortunate to secure the services of such a man, and also the Sturtevant Mill Co. should be congratulated in having such high grade products to attract Mr. Christensen, for it is needless to say he would not in any event be connected with manufacturers building inferior machinery.

Kenneth Seaver, chief engineer of the Harbison-Walker Refractories Co., Pittsburgh, Pa., whose product is largely used by the smelting companies, has been honored by being elected a member of the American Iron & Steel Institute. He is a graduate of the Massachusetts Institute of Technology and is known as an authority on furnace linings.

The Austin Western Road Machinery Co. has opened a store on Fremont street near Market, San Francisco, Cal., under the management of Mr. French.

F. L. Williamson, vice president of the Dewey Portland Cement Co., Kansas City, Mo., has purchased a tract of ground in the Mission Hills near Kansas City for a consideration of \$6,470. Mr. Williamson plans to erect a handsome residence and will begin work immediately.

John A. Acker, formerly of Allentown, Pa., has taken up the duties of superintendent of the Wash Portland Cement Co., of Stroh, Indiana. Mr. Acker came to Allentown from Ironton, Ohio, where he was instrumental in building a large and up-to-date cement plant. While at Allentown he was superintendent of the Nazareth Quarries Co. and ran a quarry of his own in East Allentown.

Albert Stolz has succeeded P. A. Kypke as the representative of the Universal Portland Cement Co. in southeastern Minnesota. Mr. Stolz is an experienced cement man, having been with the Universal people for several years in another territory. In sending him into this territory, the company can assure their patrons the proper service at the hands of an experienced man.

We were favored on May 29th by a visit from W. P. S. Johnson and George N. Gorman, sales managers respectively of the Winnipeg and Calgary offices of the Canada Cement Company, Ltd., who report great activity in the cement construction throughout the entire Dominion.

C. M. Foster, formerly secretary of the old Meacham & Wright Co., until recently builders' supply dealers of Chicago, is now special representative of the Edison Portland Cement Co., in Southern New Jersey, Maryland and that part of Pennsylvania east of Harrisburg. Mr. Foster was with the Meacham & Wright Co. for a period of 15 years. He was general manager when he left their employ.

Col. P. Raegan, president of the Hocking Valley Clay Products Co., Columbus, Ohio, was in Chicago last week, after a trip through the West, and reports that crops are in excellent condition and that prospects for the summer and early fall in the building material line are exceptionally bright. Col. Raegan is optimistic and declares that his "Greendale Rugs" are becoming quite popular.

Henry Gray, secretary-treasurer of J. B. Speed & Co., and secretary-treasurer of the Louisville Cement Co., Louisville, Ky., was in Chicago for several days last week. Business has been rather light, reported Mr. Gray, except for a normal amount of routine orders and deliveries on contracts closed earlier in the season. Stocks are full. Orders to date, though small in volume, have mounted up in the aggregate.

### APPLIED PSYCHOLOGY.

#### I.

I haven't had an order for at least a month or two, Which doesn't mean by any means that I am feeling blue; Conditions are so good in fact that I am free to say Prosperity is coming and its headed right my way. My business is booming, for the President has said The essence of prosperity is lack of doubt and dread.

#### II.

I don't know anyone at all who wants to buy a thing, Don't know a single prospect who might make the cash box ring; But why should that make me depressed when business is good And everything is breaking right, exactly as it should. I have the presidential word to make myself believe That business is out of sight, why therefore should I grieve?

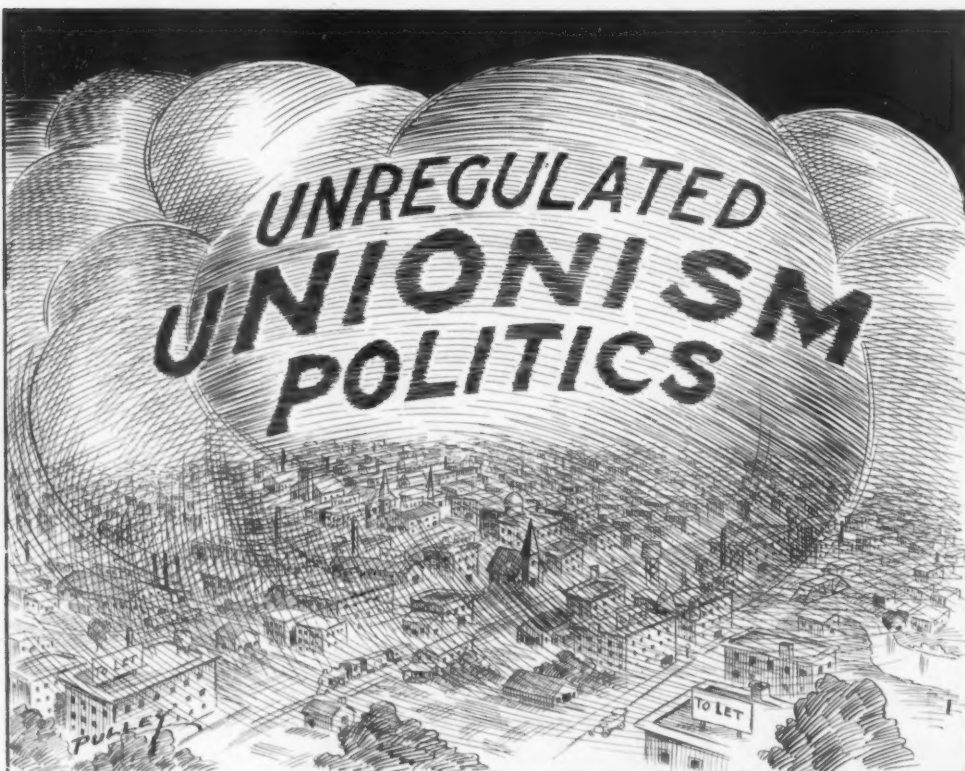
#### III.

Collections are not good or bad—there are none to report, I send out statements now and then, but do it just for sport; The weekly payroll comes around on strictly schedule time, But strange to say, I can't collect a psychologic dime. And yet I feel ecstatic for the President avers It's pure misapprehension when bad business occurs.

#### IV.

In sentences collegiate, the situation seems, To be a mental process, such as oft occurs in dreams; The psychologic fallacy existing in the mind, A theoretic paradox, or something of the kind That makes a person's business seem rotten to the core When actually it's better than it's ever been before. —Frank Adams Mitchell.

### Cause and Effect



# National Builders' Supply Association

## N. B. S. A. To Meet June 20

Preparations have been completed for the meeting of the Board of Directors of the National Builders' Supply Association, which is to be held at Hotel Sherman, Chicago, on Saturday, June 20. This is the first meeting held by this body since its convention last February, and from advance reports it is expected that things will hum while it is in session. Every director has signified his intention of being present and it is not expected that one will be missing when the roll is called.

It is the desire of the officers of the Association to make this coming meeting more than just an ordinary gathering of the directors. They want it to develop into a semi-annual meeting of the entire membership, and with this idea in view they have invited the membership to come to Chicago on June 20 and join with the directors. Everyone is welcome and the more that can find it convenient to attend, the better pleased will those be who have charge of the arrangements.

As an added inducement for the attendance of the members, it might be said that President Cormack has sent out a special letter to the sales managers of practically every large building supply house in the country, informing them of the fact that a meeting of the Association is to be held on June 20 and stating that the officers and directors believe that immense benefits would be realized if it could only be arranged to have them present at this meeting, where questions of great importance could be thoroughly discussed. Replies have been received from several of the managers of the large cement companies indicating that they will be present, and it is expected that when the date arrives, a large representation will be on hand.

Where the members of an industry are banded together in an organization for the purpose of improving conditions in such industry, it is almost impossible to accomplish much lasting good when they meet but once each year. Real live associations are those whose meetings are held frequently; but, of course, with a national organization this is practically impossible. It is possible, however, for them to have a semi-annual meeting, and the members of the National Builders' Supply Association should take full advantage of the opportunity that is now offered them. Rare opportunities for the betterment of conditions in the builders' supply business lie within their reach and await only the united action of those who would seek them.

At the coming meeting of the Board of Directors, there will come up for discussion a good many important items, and among these will be the selection of a meeting place for the next annual convention to be held in 1915. There appears to be considerable friendly rivalry existing in the fight for this honor, and at present writing it is almost

impossible to forecast what the selection will be. This might be put forward as another reason why the members from those cities who would like to secure the convention should put forth a special effort to be present.

Every member is invited. Every sales manager is extended an individual invitation. The only thing now necessary for a successful meeting is their presence in Chicago on June 20.

The N. B. S. A. reports having received applications from the following firms:

Braid & McCurdy, Winnipeg, Canada.  
Colonial Pressed Brick Co., Mogadore, Ohio.  
Garden City Sand Co., Chicago, Ill.  
General Builders' Supply Co., Forth Worth, Tex.

Two of the applications noted above were sent in by Field Secretary Foster, and are indicative of his never failing interest in the affairs of the N. B. S. A. If there is any chance at all, Foster will get him.

### After Policies of Manufacturers

Feeling that the material dealers of the country should have a better understanding of the policy of the manufacturers from whom they obtain their supplies, their consideration of and answer to a number of questions is asked by the National Builders' Supply Association.

"A keener realization is daily forced upon us," says President Edward K. Cormack, "that the interests of our fellow dealers in localities other than our own, are also our interests.

"Too frequently it happens that a manufacturer has a 'dealer' policy in one town, and an 'anti-dealer' policy in the other, completely overlooking the fact that because of this non-representation, some other manufacturer will retaliate by disturbing his agency arrangements in localities where he is represented.

"The National Builders' Supply Association does not seek to prohibit manufacturers from marketing their wares direct, although we believe it to be a mistaken policy, just as much as it would be for the manufacturers of woollens, dry goods, furniture and groceries to market their products direct to the consumer.

"We feel that the manufacturer's best interests lie with the legitimate dealer. By legitimate dealer is meant one who has capital invested in sidings, yards, tracks, warehouses and teams and who carries a stock of material on hand. This is the man whose claims we urge and whose interests we work for, regardless of whether he be a one-yard or a 20-yard man.

"From all sections of the country come daily requests for information in regard to whether or

not a certain manufacturer is a 'dealers' man, and so that we may be able to answer these questions accurately we ask that the questions be answered by the manufacturers."

The questions which President Cormack requests the manufacturers to answer follow:

1. Do you sell exclusively to dealers?
2. If not, what are the exceptions?
3. Do you add the dealer's profit in your quotations to those not listed as dealers?
4. If so, what percentage of the price added is the dealer's margin?
5. What quantities and accounts, if any, do you consider as outside of the dealer's province, and should be handled exclusively by the manufacturer?
6. Would you be willing to refer every inquiry for material under a certain amount, and with the exception of accounts noted, to the local dealer?
7. If so, what should this minimum amount be under which the manufacturer should not quote?
8. If you are not already a "dealer's manufacturer" would you be willing to try the policy of marketing your product exclusively through the legitimate dealer, understanding by the legitimate dealer one who has capital invested in sidings, yards, warehouses, teams and stock?

### Constitution in Book Form.

Secretary J. Allison Gring, of the recently organized Building Material Dealers' Association of Eastern Pennsylvania, has had the constitution and by-laws of that association printed in book form and distributed among its members.

### Money Put Into Building.

For every human being in the United States \$11 was last year put into a building of some kind. The money expended in such operations just about balances our government debt.

There are no figures to show definitely how much of this immense sum went into buildings that earn nothing, but far more than half of it certainly has become nailed down into an investment that is non-creative.

Most of the cash a man devotes to his home at once goes into the drone class, whereas the money he spends for a chicken house or a better stable for his cows or improved farm implements immediately begins to work and earns interest upon the investment. A new store is a money-grubber, but frills upon the home are not.

Right here is one reason why Europeans, who as a class earn far less every year than Americans, have such stupendous sums to invest in securities. Building in Europe cannot exceed \$2 for each person, as against five times that for Americans.

No other part of the earth's surface was ever covered in so brief a time with such a colossal amount of buildings as our particular slice of North or America.

#### NATIONAL BUILDERS' SUPPLY ASSOCIATION.

Chamber of Commerce Bldg.

Chicago, Ill.

#### Application for Membership.

The undersigned being heartily in accord with the principles and aims of the National Builders' Supply Association does hereby apply for membership:

Firm name.....

Signed by.....

P. O. Address.....

Date.....

#### Officers.

President—Edw. K. Cormack, Chicago.  
Treasurer—John J. Voelkel, New Orleans.  
Secretary—L. F. Desmond, Chicago.

#### Directors.

J. H. Allen, Lincoln, Neb.  
Charles Warner, Wilmington, Del.  
C. N. Ray, Detroit, Mich.  
W. F. Jahneke, New Orleans, La.  
C. M. Kelly, Providence, R. I.  
W. W. Coney, Cincinnati, O.  
L. W. Macatee, Houston, Texas.  
D. J. Kennedy, Pittsburgh, Pa.



# THE RETAILER

## Proposed Lien Law For State of New Jersey

What is said to be the most ideal Mechanic's Lien Law ever drafted is now pending before the New Jersey State Legislature with prospects of being passed at an early date. The measure was drafted by a commission appointed by the Legislature to "Revise and Codify the Mechanic's Lien Law." The commissioners and the interests they represent are: Frank H. Genung, Newark, N. J., president of the Mason Material Dealers' Association of New Jersey; William A. Tuttle, Westfield, N. J., lumber dealer and congressman; James G. Blauvelt, Patterson, N. J., counsel representing the building trades unions; Arthur A. Quinn, Perth Amboy, N. J., representing the labor unions. James M. Reilly, Newark, N. J., secretary of the Mason Material Dealers' Association of New Jersey, acted as secretary of the commission. Attorney Edward J. Luce prepared the proposed Lien Law at the suggestion of the Commission and the bill was submitted to the Legislature as drafted. If this measure is passed, the state of New Jersey will have upon its statutes a law giving building material men as well as workmen more and better protection than any other lien law in the country. Being ideal and similar to such laws as should be passed by every state, we print it for the benefit of the Building Material Industry. The proposed law will be published in two installments.—Editor.

### COMMISSIONERS' DRAFT OF A BILL TO REVISE, CODIFY AND PERFECT THE MECHANICS' LIEN LAWS OF THE STATE OF NEW JERSEY.

An act to secure to mechanics and others payment for their labor and material bestowed upon or for any building and regulating the creation, operation, enforcement and discharge of liens therefor.

#### Section 1.

I. The short title of this act is The Mechanics' Lien Act (1914). It shall be strictly construed, so far as it confers substantive rights in derogation of the common law; but it shall be liberally construed, so far as it relates merely to matters of procedure.

#### Section 2.

I. Throughout this act, except where a contrary intent is plainly manifest

A. The word, building, means a part or parts, as well as the whole, of a building; it also includes fixed machinery or gearing or other fixtures for manufacturing purposes; and all such structures as docks, wharves, piers, and the like upon or over any navigable waters.

B. The term, fixtures for manufacturing purposes includes anything for said purposes that is, or is intended to be, attached or annexed to any land or to any permanent structure thereon; it also includes any structure designed to be used in building or repairing vessels whether on land or water, and whether it be permanently or temporarily attached to the freehold, and although so built as to be removed from place to place.

C. A dock, wharf, pier, or other like structure upon, or over, any navigable waters is to be deemed as appurtenant to the land above high water mark which the owner of such land uses, or may use, in connection with such structure; and also to such waters themselves and the soil beneath them, so far as such owner of the structures has any estate or interest therein.

D. A building is to be understood as removed when it is permanently re-located either upon the same, or upon another tract, curtilage or lot; and the operation of removing may be deemed to include all such work as is germane, or appropriate, to the operation of re-locating such building and constituting it a completed structure, either independently upon its own foundation, or by incorporating it with some other building.

E. Any word importing the singular number or masculine gender shall also import the plural number or any gender, respectively.

F. The word, person, shall import a body corporate as well as a natural person.

G. In the case of gearing or machinery, the bringing of the same upon the premises, where they are to be installed, shall be deemed to be the commencement of the work of installing them, and the work of installing them shall be deemed to be a building.

#### Section 3.

I. For the payment of any debt contracted and owing to any person for labor performed or material furnished, for hereafter erecting, building, adding to, altering, repairing, or removing any building within this state, every such building, and the tract, curtilage or lot of land whereon the same is located or re-located or to which it is appurtenant, shall be liable to a lien in favor of such person, except as is otherwise below provided.

First proviso. The lien cannot attach to the building unless there be some person's estate in the land to which also it attaches.

Second proviso. With the estate of a married woman, in the case provided for in the fourth section of this act excepted, the lien cannot attach to the estate in the land of a person who, or whose predecessor in title, did not on his own behalf authorize the work to be done, or did not consent thereto in writing, with intent to subject such estate to the possibility of such lien.

Such consent in writing need not, but may, be acknowledged or proved, and recorded as deeds of conveyances are, and when so acknowledged or proved and recorded, the record thereof and copies of the same duly certified shall be evidence in like manner.

Third proviso. When the work is done or the materials are furnished in pursuance of a written contract, and the contract is filed, in the manner below specified and in compliance with the other requirements below specified, before work or materials, for which claims might otherwise be made, are respectively done or furnished, the lien cannot attach in favor of anyone but the contractor:

A. Such contract or a duplicate thereof, together with a copy of all such specifications and plans referred to therein as may be necessary to enable third persons to ascertain, with reasonable certainty, the scope as well as the character of the works which the contractor has undertaken, must be filed in the office of the clerk of the county in which the building is situated.

B. Such contract shall not be deemed sufficiently filled in any of the following cases:

1. If the contract price is not truly stated therein to the prejudice of any party interested.

2. If the contract in any material respect is a fictitious or fraudulent one.

3. Excepting the case when a contract, though signed by and purporting to be the contract of the husband only, must nevertheless be deemed to be the

contract of his wife, and so sufficiently filed as hers.

If the contract does not plainly disclose the name of the party, as owner, whose contract it really is, and the fact that it is his contract.

4. If the contract fails to disclose, when such is the fact, that the party thereto as owner has no legal estate in the land therein referred to, and such party, upon inquiry, or otherwise, knowingly misstates the facts as to his estate, to the prejudice of any party interested.

#### Section 4.

I. Any married woman, who owns an estate in any land upon, or to, or appurtenant to, which, as the case may be, any building shall, with her knowledge and by the direction or procurement of her husband, be erected, built, added to, altered, repaired or removed, shall be deemed, on her own behalf, to have procured such work to be done, and such building and her estate in the land shall be subject to lien therefor as fully as though she had expressly, on her own behalf, authorized and procured said work to be done;

Provided, however, that if such married woman files, in the office of the clerk of the county where the said lands lie, a writing describing said lands, specifying the work that is being done, or that may be about to be done, and declaring that such work is, or will be, done without her consent, and against her wishes; then such building and such married woman's estate in said land shall not be liable to lien for any labor or materials bestowed, upon the work so specified, after the date when such writing is so filed.

#### Section 5.

I. Every person claiming the lien hereinbefore provided must, within four months after the labor is performed or the materials furnished for which he claims, file, in the office of the clerk of the county where the lands subject to such lien are situated, a written claim which shall contain:

A. Such a description of the building and of the curtilage upon which the lien is claimed as shall identify the character of the former and the location of the latter.

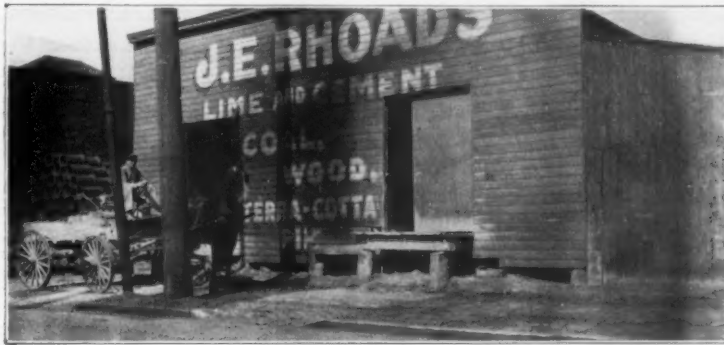
B. The name of the owner of the estate in the land upon which the lien is claimed; the estate itself need not be specified.

C. The name of the person (who shall be styled the Builder) who contracted the debt or for whom, or at whose request, the labor or materials, for which the lien is claimed, were respectively performed or furnished.

D. A bill of particulars exhibiting the amount and kind of labor performed and of materials furnished, the prices and dates of the same, all just credits, pay-

(Continued on Page 35.)





WAREHOUSE AND YARD NO. 2 OF J. E. RHOADS IS LOCATED ON THE PENNSYLVANIA TRACKS IN THE REAR OF THE MAIN OFFICE.



THE THIRD YARD OF J. E. RHOADES HAS RECENTLY BEEN COMPLETED IN THE NEWER SECTION OF THE EAST END OF HARRISBURG, PA.

## Community's Progress Demands Improvements

Loss of Time and Expense Incident to Local Delivery of Materials by Teams Necessitated That Builders' Supply Retailers Add to the Number of Their Warehouses—Condition at Harrisburg, Pa.

The question of making improvements and additions to building material yards and warehouses is one that often presents itself, but is seldom properly solved. Of the utmost importance in deciding what improvements or additions to make is the perplexing problem of delivering materials.

The greatest factor in the retail builders' supply business is delivery. Every decision relative to the enlarging of warehouses or the addition of yards must take into consideration the haulage problem. Inadequate systems of delivery have brought more retailers to the brink of bankruptcy than possibly any other cause.

There are four items that should enter into the price of materials delivered on the job. They are: cost of materials, overhead expense, cost of delivery and profit. The first three enter into every sale; the last enters into some.

The cost of materials and overhead expense are easily computed; and the percentage of overhead expense is the same regardless of the distance of the job from the warehouse or yard. The cost of delivery is the item that varies in every instance and it is therefore the one to be given the most consideration. By adding the percentage of overhead expense and a fair percentage of profit to the cost of materials, it is believed that by estimating the cost of delivery, a firm can easily show profit in any given job. In most instances the cost of delivery is either under or over estimated.

### Methods of Ascertaining Cost of Delivery.

There exists in every well regulated office some specific method of knowing the exact cost of delivery. A good method adopted by some leading concerns is to divide the community in which deliveries are made into sections and vary the cost of delivery according to the distance the sections are from the warehouse or yard.

Another method whereby the delivery cost can be easily computed is to have the number of building material yards grow in proportion to the city in which the firm is located. When the materials are to be delivered in close proximity to the warehouse or yard, it is well to have but one yard; but where the city is spread out over a large territory and being developed in two or three sections at the same time, it is well to have yards as close to these growing neighborhoods as it is possible to procure them. This is the method employed by J. E. Rhoads, of Harrisburg, Pa.

The main office and warehouse of this firm is located close to the center of the city, but unfortunately is not directly connected with a railroad track. Ross Rhoads, manager of the company, has sought for some time to secure permission to cross Pennsylvania avenue, a city street, with a railroad

siding so as to bring the cars directly into his yard at this point, but so far he has been unsuccessful, although it is believed that the city will grant his request shortly. Because of this unfavorable condition, another warehouse and yard has been located just a few city blocks away on the Pennsylvania tracks. Here the material is unloaded into the yard and warehouse and the surplus taken to the main yard.

Recently a number of manufacturing plants have been built in the eastern part of Harrisburg. It is natural that speculators as well as home builders should locate close to these factories, and as a result a great deal of building has been in progress, several new residence communities springing up. Realizing the significance of being the first building material dealer to locate in this community, Mr. Rhoads has constructed a yard and warehouse commensurate with the demands arising from the building operations.

This addition was added to the other warehouses and yards of the Rhoads concern entirely because of the haulage problem involved in the delivery of materials. In commenting upon the situation, Mr. Rhoads declares that the cost of delivering materials to the new section over the hilly roads was so great that the cost of the materials to the consumer did not permit him to improve the vacant property. Another feature to be considered is the time taken to deliver the materials. Sizing up the

situation, he secured a plot of ground adjacent to the Reading tracks, and constructed his third yard and warehouse upon it. This was about a year ago, and that the investment was worth while is evidenced by the large demand for materials that comes into this office.

It was the necessity of hauling materials from the Pennsylvania siding to the main warehouse that induced this company to construct its second warehouse and yard. Though the haul was very short, the teaming proposition was an expensive proposition and the only solution, according to Mr. Rhoads, was the opening of another yard. Thousands of dollars are saved annually because of this investment.

Building operations at the present time are good in Harrisburg. During the summer months the building material dealers are kept busy supplying the materials for the construction of residences and business property. The city improvements keep the teams busy whenever there is a lull in the delivery of coal and wood during the remainder of the year.

Ross Rhoads has in his employ an average of 30 men and 12 teams. During the busy part of the year a number of extra teams are hired for the delivery of materials. Keeping the men and teams busy comes directly under the charge of Charles Rhoads, who is yard foreman of the Rhoads concern.



OFFICE AND MAIN WAREHOUSE OF J. E. RHOADES IS LOCATED CLOSE TO THE BUSINESS CENTER OF HARRISBURG, PA.

# News of the Trade

## Business Improvement Shown.

Dun's Review, published June 6 by R. G. Dun & Co., stated:

"Business conditions now are more distinctly marked by seasonable activities. Developments mainly favor improving prospects and some encouraging recovery is noted in the leading industries. Money continues in moderate request, but a better tone strengthens the markets for bonds and other investments, and inquiries as to impending railroad and other issues indicate successful flotations.

"The week's volume of payments through the banks include only five days, as against six last year and this accounts for decrease shown. The average of dealings is well sustained and the record of trading defaults again makes a satisfactory exhibit.

"Increased demands in iron and steel and for freight equipment are broadening healthy sentiment. New capacity at Gary started for the first time and more hands were re-employed at railroad machine and car shops. Settlement of brick yards trouble has cleared difficulties in building and heavy construction, and demands now test the markets for immediate supplies.

"Bank clearings, \$290,251,270, are 12.1 per cent less than a year ago, and compare with \$307,844,702 in 1912. Failures reported in the Chicago district number twenty-five, against twenty-seven last week, thirty-two in 1913, and eighteen in 1912. Those with liabilities over \$5,000 number seven, against ten last week, sixteen in 1913, and eleven in 1912."

## Building Material Prices

Portland Cement—The cement market has advanced very little in the last month, but the prospects are very good for an increase of activities in all lines. Prices given are f. o. b. cars at points named, including cloth sacks, for which, in general 40 cents per barrel. (4 sacks) is refunded on return in good condition. Prices per barrel (including 4 cloth sacks are as follows: Boston, \$1.72; N. Y. C., \$1.58; Chicago, \$1.55; Pittsburgh, \$1.50; New Orleans, \$1.64 on dock; Memphis, \$1.82; Cleveland, \$1.63; Detroit, \$1.59; Indianapolis, \$1.60; Toledo, \$1.59; St. Louis, \$1.55; Milwaukee, \$1.55; Minneapolis, and St. Paul, \$1.65 to \$1.70; Montreal, \$1.75 to \$1.80; Toronto, \$1.95; Winnipeg, \$2.40 to \$2.50; Kansas City, \$1.63; Omaha, \$1.78; Portland, Ore., \$2.10; Spokane, \$2.20; Seattle, \$2.00; Tacoma, \$1.90; Duluth, \$1.78.

Crushed Stone—1½-in. stone, prices per cubic yard, f. o. b. cars in carload lots, unless otherwise specified. Boston, 80 cents per ton at the quarry; N. Y. C., 95 cents to \$1.00, in full cargo lots at the docks; Chicago, \$1.15; Toronto, 75 cents per ton at quarries; Spokane, \$1.25; Seattle, \$1.25; Portland, Ore., \$1.00; Tacoma, \$1.25.

Gravel—Prices given are per cubic yard f. o. b. cars in carload lots unless otherwise noted. Boston, 75 cents; N. Y. C., 95 cents to \$1.00, in full cargo lots at docks; Chicago, \$1.15; Portland, Ore., 85 cents; Spokane, \$1.50; Seattle, 75 cents; Winnipeg, \$1.85; Tacoma, 60 cents.

Sand—Prices are per cubic yard, f. o. b. cars in carload lots unless otherwise indicated. N. Y. C., 50 cents, full cargo lots at docks; Chicago, \$1.15; Toronto, \$1.15; Portland, Ore., 85 cents; Spokane, \$1.25; Seattle, 75 cents; Winnipeg, \$1.75; Tacoma, 60 cents.

The Texas Trap Rock Co., of San Antonio, has increased its capital stock from \$60,000 to \$80,000.

## Chicago Dealers Again Busy.

### Brickmakers' Strike at an End and Building Is Again Active.

The wheels of Chicago's great building material industry are again revolving. Thousands upon thousands of men who have been idle for the whole or greater part of three long months are again back at work. The brickmakers' strike is at an end and the manufacture and sale of building brick in Chicago is again proceeding unhampered.

After much delay the unions have consented to the plan laid down by the manufacturers who have virtually granted every request made by the brickmakers, with the exception of the clause relative to the dismissal of employees. The unions insisted that they should have the right to decide whether a manufacturer could discharge any one or more of his employees. The long, drawn-out fight hung principally on this clause and was only settled when the brickmakers acknowledged the right of the manufacturers to discharge whom they chose.

This has been a disastrous strike to the laboring and business interests of Chicago. The strike lasted 88 days and while there were but 2,000 brickmakers affected, 150,000 working men and women were made idle through the brick famine. It is estimated that the loss in wages totaled \$44,000,000 and a similar amount showed up as the loss in business. Conservative estimates place the total loss caused by the strike at \$88,000,000. Because of the tremendous loss this strike has been termed, "The million-dollar-a-day strike."

But a five-year contract has been signed and the brickmakers, as well as the manufacturers, are again moving as one unit endeavoring to supply the great demand for common brick.

The Chicago strike had brought to practically a standstill the business of building material dealers in Chicago.

The scarcity of brick produced a condition which called for assistance of the face brick dealers. In lieu of common brick, they sold such cull brick as they were able to pick up and received therefore, an average price of \$11.50 to \$12.00 per thousand. The prices they were compelled to charge for these cull brick were too high for the average contractor and necessarily delayed the construction of many buildings until the close of the strike.

As very little work can proceed in Chicago without the supply of common brick, the sale of materials of other descriptions was entirely held up. There were few orders taken for anything but foundation materials until the date the strike was declared at an end. Then the orders came in with a rush; face brick and lime were demanded immediately, and cement and plaster were ordered with instructions to deliver as soon as possible.

Harry Padolsky, of the Bonner and Marshall Co., says that business was fine the first day the men went back to work. Forty loads of face brick were delivered from one yard. Mr. Padolsky declares a great deal of the brick which are now demanded were ordered prior to the strike and were held up because of the inability of the contractors to use them, with the result that part of these brick are already on the job, some of them are in the yards of the retailers and some of them have not as yet left the plant of the manufacturers. This seems to be the rule among the face brick manufacturers. Many orders which had not materialized when the strike was called and which were held up because of the uncertain condition of the situation have also been received since the close of the strike. All the members of the Chicago Face Brick Association

declare that orders are being received in a very gratifying manner.

The settlement of the strike came coincident with a pronounced activity of the real estate market. Whether there was any relation between the two is a question, but inasmuch as there was a dullness during the period of the strike, it is readily conceded that the spirit of the manufacturers and dealers to supply materials is having a good effect upon the real estate market. Building indications are not as good as last year, for during the week of June 1 there was but a total of 60 buildings to be erected at an estimated cost of \$818,800.00; as compared with the 140 buildings erected at a cost of \$1,613,200.00 during the estimate period of last year.

As evidence of the fact that the paving brick industry was not much hindered by the brickmakers' strike, William M. Hansen, manager of the Paving Brick Publicity Bureau, and F. W. Lucke, Chicago representative of several paving brick manufacturers, are riding around in new automobiles. Mr. Hansen has a "Ford," while Mr. Lucke proudly speaks of his "Cadillac."

Edward K. Cornnack, manager of the Wisconsin Lime & Cement Co., and also president of the National Builders' Supply Association, is an exceptionally busy man these days. In addition to looking after the payments of his concern he is also devoting a great deal of time toward making the coming meeting of the Board of Directors of the N. B. S. A. a decided success. The board will meet at the Hotel Sherman, Chicago, on Saturday, June 20. In addition to the board, Mr. Cornnack has invited the members at large and sales managers of the various manufacturing concerns to be present.

## Kansas City Retailers Busy.

Kansas City, Mo., June 3.—With a fair volume of building operations in evidence, retailers in this section are finding the situation profitable enough. Recent business has been excellent, both staple and specialty lines moving well. The only question now is as to whether midsummer business will be as plentiful as was spring trade. There is a difference of opinion on this score, the situation being rather hard to analyze. Building permits have slumped somewhat recently, and the prospects are for a slight decrease in summer volume of business, apparently. Excellent crop prospects, on the other hand, may act as a stimulant and cause more building than was expected in some quarters.

Supply men of Topeka, Kan., advertised liberally in connection with the dedication of the G. A. R. Memorial Hall in that city recently. The structure, costing \$50,000, was formally dedicated in the presence of hundreds of veterans from all parts of the country. The men whose supplies went into the building took advantage of the psychological moment by using space in special editions and otherwise "tooting their horns." The Chicago Lumber Co., of Topeka, provided the plastering; Topeka Tile & Mantel Co., the tiling; R. C. Starr, the crushed rock; A. L. Olney & Son, the ornamental plastering; Rinner & Warren, the metal roofing, and Hargreaves & Co., the brick, terra cotta, tile and cement.

Local retailers are now receiving much building material from St. Louis and other Eastern cities. The boat line recently put into commission is proving a popular adjunct to the old transportation facilities and is apparently filling a long-felt want with retail supply men. Three hundred and fifty tons of material for the new Muehlebach hotel was shipped



by water recently, while other materials of all descriptions are coming over the water route, freight rates for which are decidedly lower than rail tariffs.

A. C. Baird, head of the Kansas City Building Supply Co., is handling a good many contracts of importance at present, chief of them being the brick for the new Southeast high school.

The Tri-State Material Co. has been incorporated with a capitalization of \$2,000 by Louis Baum, R. W. Street and others. Mr. Baum has been with the Kahn Reinforcing Co. for several years. The Tri-State will begin business in the near future, having arranged for full lines of building supplies.

Day K. Smith, one of the big local supply men, has expanded by taking new quarters in the Finance building. Mr. Smith formerly was in the O'Rear-Leslie building.

### Philadelphia Conditions Improving.

Philadelphia, June 5.—Local conditions are improving as the more favorable weather continues. The retailers are more than pleased that things have turned out as they have. This is shown by the amount of new structures that are going up on every hand. New office buildings and buildings that have been ruined by fire are now being built into fine, imposing structures that are the envy of the more unfortunate owners. As the use of rock and clay products enters largely into the construction of these buildings, it causes little wonder to see the sales of the various materials of this production increase in leaps and bounds. Taken as a whole, the sales in Philadelphia and vicinity are such as to bring joy to the hearts of all dealers in these much-needed materials.

### Pittsburgh Conditions Remain Steady.

Pittsburgh, June 4.—Retail business keeps at about the same level. There is no spurt such as happens some years when summer comes, but most dealers are doing a steady business and in some lines trade is very good. A large amount of cement is being sold in the city. The orders, however, are confined chiefly to two or three concerns. The brick business is fairly good and in some towns outside of Pittsburgh there is an excellent demand. Paving brick are going to be good sellers all summer. In the city some large contracts for brick have been placed by a few concerns, but in general the trade is scattered and is not in large volume. Sewer pipe is more active. The lath trade outside the city is beginning to start up and prices are about at the level of winter quotations.

Retailers in Ohio are much encouraged over the announcement from Columbus that 1,000 miles of public road will be built and improved in the Buckeye state this year. This will cost approximately \$3,000,000 and will give employment to 10,000 men. Ohio is to be congratulated on the fact that it will receive \$1,500,000 from John D. Rockefeller on the new income tax, which will help greatly in building its highways.

### Louisville Supply Business Improves.

Louisville, Ky., June 5.—A number of the builders' supply men of Louisville, some of them contrary to their earlier-formed conclusions, are discovering that business, after all, is better than they had even hoped it would be. One of them quoted President Wilson's pronouncement to the effect that if people would quit talking hard times and go ahead, they would soon find nothing was wrong with business. The demand from the builders in the aggregate is better than it was last year, a condition that is bound to mean business, though inasmuch as a great deal of this is in small lots

the dealer is inclined to assume that the volume is not as great as it really is.

Figures show that 315 permits, involving an estimated expenditure of \$460,580, were issued during May. These show an increase of \$93,120 over the permits issued for the same month in 1913, when a total of 245 permits was granted, at an estimated cost of \$367,460. Better than that, the figures of the same office show that from Jan. 1 to June 1 the total estimated expenditures for buildings are in excess of those for the same period last year, \$2,029,935 comparing with \$1,939,730.

The Culley Cement Block Co. this year has doubled its business over what it did last year, according to John S. Culley, the president.

Continued succession of small contracts, though they have to be sought earnestly, is producing a gratifying volume of business, according to Leo M. Parsons, of the Union Cement & Lime Co.

### Big Company in Embryo.

**Chicago Sand and Gravel Concerns Forming \$5,000,000 Company to Sell Ice and Coal.**

Plans for the formation of a \$5,000,000 corporation to engage in the sale of ice, coal and building materials in Chicago are now under way. It is reported that the new company, which will include a number of the sand and gravel concerns of the city, is organizing largely to fight the Consumers' Co., which seems to be making inroads on the sand and gravel business of Chicago.

The Consumers' Co. grew out of the old Knickerbocker Ice Co., when it was combined with the Peabody Coal Co., Hydrox Water Co. and one or two smaller firms selling kindred products. While the old Knickerbocker Ice Co. sold a little sand and gravel in its day, it is only recently that the Consumers' Co. started the sale on an extensive manner of sand and cement at its ice and coal depots in various parts of the city and suburbs.

Believing that the Consumers' Co. was going beyond its field, the movement for a new corporation was started by the sand and gravel concerns whose businesses were being affected by the sales of the Consumers' Company. The companies back of the movement are said to be:

American Sand & Gravel Co., Richardson Sand Co., McLaughlin Building Materials Co., Atwood-Davis Sand Co., A. Y. Reed Gravel Co.

It is stated that the new company will enter the field this fall with the establishment of coal yards at more than 100 sand and gravel depots in Chicago. These depots will be utilized for ice depots in the summer time.

For more than a year representatives of the proposed corporations have been selecting sites and buying ice rights for the ice harvest to supply the demand next summer. These sites have been contracted for a term of years and it was announced the new company will have thousands of tons of ice to fight what they allege to be the Consumers' Co. monopoly.

"The Consumers' Co. tried to corner too many products here," A. Y. Reed, of the A. Y. Reed Gravel Co., said. "Our company will be a large corporation, and the capital will be supplied by the sand and gravel companies here."

"A special feature, which we believe will mean a lot to persons of limited means, is the cash sale of ice in small lots."

P. M. Lewis, of the American Sand & Gravel Co., informed a ROCK PRODUCTS AND BUILDING MATERIALS representative that the proposed organization is still in its early stages.

"It is one of those things," said Mr. Lewis, "which is going through the formation period, and it may or may not go through. A number of the sand and gravel concerns of Chicago are behind the movement and they propose to consolidate and enter the coal and ice business. We are not organized, but we hope to be."

The announcement of the plans of the proposed organization was made a little prematurely. The men behind the movement were working quietly and the fact that the plans had been given publicity was deplored, as they had hoped to spring a big surprise on Chicagoans this fall.

### Roofing Used as Building Material.

For temporary structures prepared roofing materials are being used to a large extent on railroad work and in other places where portable sleeping quarters are required. Especially is this a fact where railroad gangs find themselves short of comfortable quarters through the absence of freight cars in which these workmen are usually housed.

By driving a few posts into the ground to form the framework of the building and to act as studs, a few rolls of prepared roofing can be used very advantageously in the construction of a building. A material is desired that will be able to withstand the extreme heat of the midsummer's sun as well as extreme rain and hail storms. It must also be a material which can successfully withstand the damaging onslaughts of hurricanes and windstorms.

The average building paper is not durable enough for this purpose—and indeed never was intended to be used in this way. Roofing materials, reinforced as they are with a number of layers of durable and lasting materials, are ideal for this purpose. The gravel covering is sufficient to prevent the rain from beating into these materials because of its hardness and its stability to readily shed any water that might fall upon it.

It is necessary that these portable sleeping quarters be cool enough to enable the occupants to secure refreshing sleep. This is a good investment for the employer as well as the employee. A man can work a great deal harder after a refreshing night's rest than after a night of restlessness due to extreme heat. Roofing materials of the proper thickness are sufficient to prevent the sun's rays from penetrating into the interior of the structure. Due to this cause, the sleeping quarters become desirable places and induce workmen to secure a greater amount of sleep and an opportunity to prepare themselves for hard work on the following day.

Superintendents of gangs working in temporary locations find that when a building is no longer needed at a certain place the capped nails may be easily withdrawn, the roofing rolled up and transported to the next stopping place. In like manner the studdings may be used many times before they begin to show wear.

In using roofing materials for this purpose it is well that the material be of the most durable quality and manufactured in such a manner as to be able to resist the destructive elements—their natural enemies.

### CALIFORNIA CITIES WANT NEW BUILDING LAWS.

Twenty-two civil engineers of San Francisco have petitioned the Building Committee of the Board of Supervisors of San Francisco for the appointment of a commission of three engineers, each having at least 10 years' experience, to revise and rearrange in logical order the structural and engineering provisions of the building ordinance of that city so that they may conform to modern practice. The petitioners claim that the present building law is obsolete in some particulars and vague in others, and that a thorough revision is desirable.

The city authorities of Berkeley, Cal., are endeavoring to secure copies of the building laws of every important modern city in the world for use and comparison in devising a new building ordinance for that city.



# How to Handle the Farmer

(By Frederick D. Curtiss.)

## Philosopher Objects to Direct Selling of Materials

Retailer Argues That the Man Soliciting Orders Fifty-Two Weeks Out of Each Year Is Entitled to Big as Well as Small Orders—Associations Help to Solve Problem

Farmer Jones was much surprised when he drove up to the Philosopher's office to find the building material man in confab with his two competitors, all apparently on the best of terms and in perfect accord on the subject under discussion. By the



"IT WAS YOUR DIME I LOST."

time he had tied his horse the conference reached an end, and as soon as the visiting material men had departed he demanded to know the occasion or the love feast.

"An old, old subject," replied the Philosopher, with a weary smile. "Our friends, the manufacturers, are off the reservation again. They heard of a job in prospect in this territory that called for something over half-a-dozen barrels of cement, straightway forgot all about the building material dealer and rushed in to get the job direct. Before they had gotten through the price of cement in this locality had been shot as full of holes as a window screen, one of us three had lost an order that meant something and the manufacturer who booked the business is wondering whether he will come out even on the job. It's a gay life!"

"What are you going to do about it?" asked Jones, who, as a thrifty consumer, was inclined to view complacently anything that had the appearance of cut prices. "You can't stop selling cement."

"No," replied the Philosopher, "we realize that, but perhaps if we go after the manufacturer in the right way we can teach him that it is a mistake to undersell the dealer, who is the best customer he has. In fact, I went after the representatives of two concerns whose cement I handle when they were here scrapping for the order. I showed them how the dealer is on the job 12 months in the year, hunting up the little orders as well as the big ones, and gave him a few figures to show how large an aggregate the little orders make. Furthermore the

dealer naturally plugs hard for the brand of cement he carries, thus increasing its fame and helping to build up future business.

"I know that," he answered, "but when the general manager sent me down here to get this order he said he was particularly anxious to land it and that he believed that if one wants a thing well done he had better do it himself."

"When you go back to the home office," I replied, "you ask your manager how about getting a haircut and see what he has to offer. Furthermore, ask him for me if he thinks more of this one order—which, by the way, you lost because another fellow cut under you at the last moment—than he does of all the business he got from me in the last three years. Understand, I am making no threats, but I would like to have his opinion of his business sagacity in helping demoralize the market here and not getting any business out of it at that."

"The manager saw the point and wrote me a contrite letter in which he expressed his regrets and all that, for his spirit was chastened because he had lost the order. He probably won't do it again—until another big contract looms up. Then he will hear that some of his competitors are going after it direct, and he will follow suit."

"The trouble is that there is too much competition of the wrong sort. Some fellow said that 'competition is the life of trade,' but he didn't know everything about competition. There are times when it is death and destruction and it is the consumer who gets the worst of it in the long run. This is a situation which makes it mighty hard to be philosophical."

"We three building material men are trying to face this particular carbuncle. We don't want to bump against any laws made to prevent restraint of trade, but we would like to show the manufacturer that he is making a mistake in ditching the man who acts as his personal representative 52 weeks out of the year, every time an order a little bigger than usual is in prospect. I notice that some of the trade associations are taking this up, and especially in the East. I am strong for the moral suasion stuff as long as it works. We building material dealers, of course, will continue handling cement, for it is a commodity that has wider use each year, and before we get through I imagine that we will educate the manufacturers to do the right thing. Just now they are like the kid who was sent to the postoffice by a neighbor to buy five postage stamps. The man handed the lad two dimes, one to keep for his services. Some time later the boy came back blubbing, and said he had lost one of the dimes."

"But why didn't you buy the stamps?" asked the man.

"Because it was your dime I lost," was the reply.

"Every time there is a goat needed they try to put the horns and whiskers on the retailer; but a goat butts back when abused and perhaps when we wear those horns and the alfalfa long enough we will be goat-like in disposition."

"I've kicked before to the manufacturers and they always send back pleasant letters, full of nice generalities, but as hard to get the pith out of as the one a young man from this town sent to his dad. The boy's health had broken down, the parents feared tuberculosis and sent him to the Southwest. Time hung heavy on his hands, he got in with a bad crowd, and was arrested on the charge of stealing a quarter of beef. Being out of funds he couldn't pay his fine and went to jail. Then he wrote like this to his father:

"Dear Dad: I've picked up some flesh since I came here, but I am still confined to my room. Please send me \$100."

"The retail dealer has enough on his mind without fighting the competition of the manufacturer. That makes the business more uncertain than the truck farm of an Irishman just outside of the town. A city tourist in an auto came along one day and thought to have some fun with the farmer."

"What are you planting, Mike?" he asked.

"Praties," was the reply.

"Do you think potatoes will come up?"

"Sure."

"Why, I set out onions in our garden last year and carrots came up."

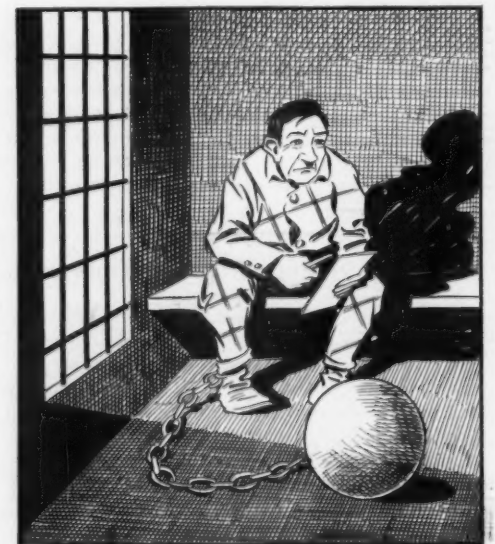
"Oh," said Mike, "I set an acre of turnips last year in that field over there and do you know what came up?"

"No," said the tourist.

"My old black cow and ate them all," said the farmer.

"In this case the manufacturer takes the place of the old black cow."

"I realize that they have their troubles as well as we do, but I maintain they can conquer them by right methods. Take for instance one of the railroads in this locality, which was having a spasm of economy and let its fences run down, as well



"I AM STILL CONFINED TO MY ROOM."

as other things. Then came an epidemic of claims for horses and cattle killed on the right-of-way. It appeared from the papers filed that every animal which had met with violent death was of the best pedigreed strains and extremely valuable.

"Finally one of the lawyers bundled all of the papers connected with the claims into one sheaf and took them to the president. The latter looked them over and then exclaimed:

"It appears that nothing in this territory so improves live stock as crossing it with a locomotive."

"Then he got a wise hunch and ordered the fences rebuilt.

"Just so if the manufacturers of cement and other building materials do not stop butting in and spoiling the business of the retailers they will find that their fences are down. Some manufacturers will be wise enough to cultivate the dealers and they will reap the benefit of the trade which the dealers patiently build up by hard work, year after year. I am not going so far as to say that any dealer or set of dealers owns any given territory absolutely, but you can see for yourself that co-operation between dealer and manufacturer is the plan which will win out in the long run.

"Some of the manufacturers are pretty foxy, to listen to them, but sometimes I think they may be like Uncle Billy's mule. Uncle was an old darkey who lived on the edge of the town and he had more respect for his mule than for any man, white or black. He claimed the animal could do anything except talk, and that he didn't talk because he understood the wisdom of keeping still. One day the mule turned up missing and Uncle Billy nearly had a fit. He hunted all over for the beast and at the end of the day he was down in the depths. I met him as I was going home and heard his tale of woe.

"Uncle Billy," I said, "why don't you advertise for that mule?"

"Whyn't Ah what?"

"Advertise. Put a piece in the paper saying that he is lost. That will bring him back if anything will."

"Uncle Billy laughed for the first time that day.

"White man," he said, between chuckles, "dat mule am a powahful smaht animile, he suah am, but, Lawd bless you, he cain't read de newspaper."

"If the manufacturers read the newspapers—that is, the trade papers—with understanding they would see that the dealers everywhere are up in arms against this selling direct from the mill. They have heard our kicks and thought that was all they amounted to, just kicks. We can't enjoin them in the courts or sue for damages, but I believe they will find an aroused and organized body of dealers

something that calls for a peace conference and a treaty that will be lived up to. At least some of them will, and they will be the ones to get the advantage of the persistent hunt for business that each and every dealer conducts every working day.

"Each and every man is something to be reckoned with when he gets his back up, even the flagman at the railroad crossing just below here. He was hired just a few days ago and told that he must remain on duty until 7 o'clock, or until the limited train, due at 6:58, passed by. He was much impressed with the importance of his work, and yet, like all men, wanted to get away at night promptly at the quitting time. The second day the limited was 12 minutes late. The flagman waited impatiently and when he heard the whistle he ran out with red flag in hand and stood in the middle of the track.

"The engineer was trying to make up the lost time and the train was going nearly a mile a minute, but he brought it to a stop, jumped down and ran ahead to find out why he had been signalled.

"What is the matter?" he demanded, seeing no evidence of danger.

"What kept ye?" was the indignant question of the flagman.

"I suppose this has been a dull discourse for you," said the philosopher, "but you came in just as I was full of the subject and I couldn't think of anything else. You will be thinking of the time that neighbor of yours met the minister.

"I'm right sorry to hear of the fire at your house last night," he said to the parson. "Was there any serious loss?"

"Indeed there was," replied the dominie. "Sermons that had taken 10 years to prepare were burned."

"The farmer started to move along, as a twinkle came into his eye.

"They must have made a grand blaze," he remarked. "They were so dry."

"Then again you may have heard of the judge, who is gifted and brilliant, but absent-minded. He was on the program for a speech at school commencement one year and really was eloquent. There was a burst of applause, and then the judge became aware that his wife, who sat beside him, was nudging his ribs. He also heard snickers about him, and turned to his better half and whispered a request for an explanation.

"Of all the people who applauded your address you clapped your hands loudest and longest," she said.

"So if my discourse has been dry and I have been the only one to applaud you must charge it up to the circumstance, as I explained it."

"I don't blame you for being huffy and I hope you win in your campaign," replied Jones, "but I can see you have a long row to hoe and a few stumps to meet."

### Recent Incorporations.

The Turner Roofing & Supply Co., San Antonio, Tex., has been incorporated with a capital stock of \$28,000 by Lewis R. Sauer, George C. Sauer and A. P. Turner.

The Builders' Lumber & Supply Co., Cleveland, Ohio, has been incorporated with a capital of \$35,000 to deal in lumber and building materials. The incorporators are W. D. Fournier, W. C. Fournier, A. H. Fournier, F. J. Fournier and R. L. Sheridan.

The Kelly, Leonard & Forrester Co. has been incorporated at Ogdensburg, N. Y., with a capital of \$7,500, to deal in coal, wood and building material. C. C. Forrester, L. B. Leonard and James E. Kelly are the incorporators.

The Wilson Sand & Supply Co., of Huntington, W. Va., has been incorporated with a capital stock of \$50,000.

The Twentieth Century Concrete Block Co., of

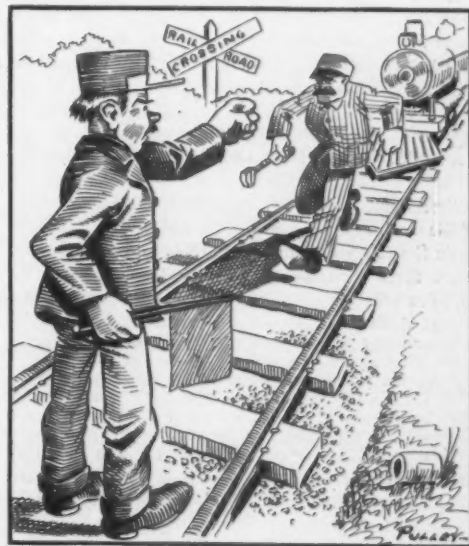
Camden, N. J., has been incorporated with a capital of \$50,000, to manufacture and deal in artificial stone, brick and building materials.

Albert Backus & Co., of Irvington, N. J., have been incorporated with a capital of \$125,000, to manufacture and deal in building materials. The incorporators are A. Backus, E. Martin, U. Schleier and W. C. Taylor.

The American Fireproof Plastering Co., of Chicago, has been incorporated with a capital of \$2,500, to manufacture and deal in building materials. The incorporators are William B. Fitzgerald, George Von Reinoltz and Elsie R. Beifuss.

The Mills Johnson Co. has been incorporated in New York City, to deal in building materials. The incorporators are J. L. Mills, A. B. Mills and J. Beasley, Jr. They will have a capital of \$40,000.

George F. Perry & Sons, of Newark, N. J., have been incorporated with a capital of \$100,000, to deal in building materials. The incorporators are



"WHAT KEPT YE?"

G. F. Perry, J. F. Perry and Andrew Mackech-nie, Jr.

Edward W. Berger & Bros. have been incorporated at Weehawken, N. J., with a capital of \$25,000, to deal in building supplies. The incorporators are Charles Neuberger, John Kane and G. A. Enright.

The Hyoline Cement & Supply Co., of Phoenix, Ariz., has been incorporated to deal in building materials.

The Toledo Flexstone Co. has been incorporated at Toledo, Ohio, with a capital of \$50,000, to manufacture, buy, sell and deal in cement and cement products. The incorporators are Holland C. Webster, Fred H. Kirtley, Nevin C. Winter, Alice Amberg and Fannie R. Blom.

The Tileine Company of America has been incorporated with a capital stock of \$2,500,000 at Kingston, Pa., for the purpose of dealing in building materials and plastic flooring.

The Turner Roofing & Supply Co., of San Antonio, Texas, has been incorporated by Louis R. Saur, George C. Saur and A. P. Turner, with a capital of \$28,000.

The Old Fort Supply Co., with a capital of \$20,000, has been chartered to do business in buying and selling building materials of all kinds in the city of Fort Wayne, Ind. The directors are A. D. Palmer, Max Irmischer, Henry Wahrenbert, Frank Kint and Henry Ehle, who, with J. R. Kennedy, William Westhoff, Charles Kanning and Joseph Hergentoeher, are the incorporators.



"HE HAD MORE RESPECT FOR HIS MULE THAN FOR ANY MAN."



## Supply Men's FORUM

This department is a new feature of ROCK PRODUCTS AND BUILDING MATERIALS and is opened for the exclusive use of our readers. The many communications which we have received recently has made this department practically a necessity. As the ancient Romans gathered at their various Fora and discussed the important topics of the day, in like manner is it hoped the "Supply Men's Forum" will be patronized, in order that important factors of the building material industry may be discussed by those directly interested in its welfare. Its columns are open to all who wish to contribute. The Editors will refrain from making comments in this department except where explanations may be necessary. All contributions to this department must be properly signed, or they will not be recognized. When the authors so desire their names will not be printed.—Editor.

### Present Form Handicaps Dealers.

Editor ROCK PRODUCTS AND BUILDING MATERIALS:

We had a case recently in court which hinged upon the following clause, which is found in the contract form generally used by both manufacturers and dealers:

"If during the life of this contract the financial responsibility of the purchaser becomes impaired or unsatisfactory to the seller, it reserves the right to require the purchaser to make payment in advance or give satisfactory security or guaranty that invoices will be promptly paid when due, or to cancel the contract."

During 1912 we were selling a concern material, and at the close of the year they owed us in the neighborhood of \$1,500.00. About the first of February of last year, this was brought down through various credits to about \$450.00. On Feb. 15 our salesman brought to our office a contract calling for the delivery of 1,000 barrels of cement, this delivery to extend through the year 1913. This contract was properly executed by the management of this company. During the balance of February and through March, April, May and June, several letters were sent, asking the party who was indebted to us to settle up for the 1912 account. No reply was received to our letters other than a verbal promise made to one of the salesmen to return empty sacks which would be sufficient to clear up the major portion of the account. About the first of June a carload was ordered forward on the contract. When presented to the writer for O. K., the order was refused, the reason being that as we had not received payment on the 1912 account, we considered the purchaser too slow for further credit. The contractor was not notified and it appears called up our office about a week later, and in talking with the sales clerk, who was not conversant with the circumstances attached to the contract and to the overdue account, received a promise that the car would be shipped immediately. A week or so later the contractor called the writer, personally, at which time he was notified that the car would not come forward until the old account was paid. The contractor at that time stated that he would take the matter to court and see if we could arbitrarily cancel a bona fide contract for such a reason. About a month or so ago the case came to trial, the old account still standing open on our books, we having brought suit for the amount involved, the contractor filing a counter-claim for damages on account of non-shipment of the amount of cement on this contract. We set up a claim that the financial responsibility of the purchaser had become impaired, in

our estimation, to such an extent that it would not warrant further shipments of material to him. They in turn produced evidence to show that the contractor's net assets would approximate about \$200,000, and that the claim that his financial responsibility had become impaired would not stand—the fact that he had not paid his 1912 account should have no bearing on the new contract. It was conceded that we could have demanded payment in cash, but this was not done, the contractor going out on the open market and buying his cement at a price, according to evidence submitted, of 5 cents per barrel less than the contract which he had with us. He, of course, could claim no damages for having to pay more for his cement, his claim being founded on extra teaming charges, on account of having to transfer stone and gravel which he had deposited on the road in preparation for the concreting to be placed under the pavement, this transfer being occasioned by the delay in receiving cement. The jury decided in our favor, claiming that we had a right to cancel the contract, but in conversation with the judge after the decision had been rendered our attorney stated that had the matter been left to the court it would have found for the contractor, as we had no right to arbitrarily cancel a contract for the reasons stated.

We have given you the particulars of this case so that you can see what any dealer is liable to come in contact with at any time, unless the wording of the contract is changed to read something like the following:

Should the financial responsibility or credit standing of the purchaser become impaired, or his manner of paying his accounts become unsatisfactory to the seller, it reserves the right to require purchaser to make payment in advance, or give satisfactory security or guaranty that invoices will be promptly paid when due, or to cancel the contract.

Very truly yours,

THE CUYAHOGA BUILDERS' SUPPLY CO.,  
EARL ROSS, Secretary.

### Protest Against Manager.

#### Minority Stockholders of New Jersey Concern Want Receiver.

To prevent what he terms the freezing out of the minority stockholders of the G. Q. Hammell Co., a successful builders' supply business at Delanco, N. J., George Q. Hammell, the owner of 25 shares of the capital stock of the concern, has filed a suit in the Court of Chancery to determine the rights of the minority stockholders and if necessary to have a receiver named that these rights may be protected.

In addition to the company itself the defendants to the suit are Stacy S. Pancoast, treasurer and general manager; Mrs. Mabel D. Pancoast, his wife; Edward H. Pancoast, father of Stacy, and John Jenkins, a stockholder. It is charged by Mr. Hammell that instead of the company purchasing the premises upon which the business is located, Stacy S. Pancoast purchased it in his own name and executed a mortgage to his father for \$2,000. Mr. Hammell further charges that nearly, if not all, of the purchase money came from the company's treasury and the property was not conveyed to the company as it should have been.

It is alleged that whatever authority Mr. Pancoast had to do this was given by the Board of Directors as the result of fraud on the part of Pancoast. Hammell claims that Pancoast was hired on a salary and realizing the opportunity began a systematic effort to get control of the majority stock of the company which has resources of nearly \$40,000. The dividends declared have not been as high as the earnings warrant, it is charged, and the court is asked to grant the necessary relief to the minority stockholders.

The Muncie Builders' Supply Co., of Muncie, Ind., has increased its capital stock from \$5,000 to \$7,500.

### Cost Finding Contest Continued

Due to the fact that the cost finding contest, which has been conducted by ROCK PRODUCTS AND BUILDING MATERIALS, was advertised at a time when the building material industry requires the undivided attention and time of building material dealers, we have been requested to postpone the contest until such a time when the retailers will be less busy and will be able to give the cost question sufficient time and study to enable them to produce for the benefit of their fellow dealers articles of much value.

A number of articles have been submitted and the writers have been notified that the contest has been postponed but that their contributions will receive the same serious consideration on the part of the judges when the contest opens again as they would if they were sent in at that time. As the Cost Editor is anxious to open this cost contest again as soon as possible, no date for its re-opening will be set, due to the uncertainty of the season, but at the earliest opportunity this fall or winter announcement will be made in the columns of ROCK PRODUCTS AND BUILDING MATERIALS.

### Specialty Contest Closes June 15

Building material retailers of all parts of the country are entering a list of their specialties in the "Specialty Contest" now being conducted by ROCK PRODUCTS AND BUILDING MATERIALS. Unlike the "Cost Finding Contest," it takes very little time to compile a list of the materials handled by the building material retailers, and in an endeavor to secure a complete list of building materials, retailers are co-operating with the Editors by sending in lists of such materials as they handle.

Not only do the number of specialties count in this contest, but the regular materials may be listed as well. Each material handled will count as one point and to the dealer sending in the largest list, or securing the largest number of points, will be awarded a copy of "Radford's Estimator and Contractor." This contest closes on June 15 and the winner will be announced in the June 22 issue of ROCK PRODUCTS AND BUILDING MATERIALS.

As the book which is offered as a prize in this contest is of the utmost value to building material dealers and their employees all dealers should take advantage of this opportunity to enter the contest and possibly secure the book. Even a dealer located in remotest part of the country may carry a large number of materials and specialties. List all these separately and send in your list not later than June 15 to the Specialty Editor, ROCK PRODUCTS AND BUILDING MATERIALS.

### BUYS LONG ISLAND TRACT.

New York, June 5.—The Borough Asphalt Co., of Brooklyn, has purchased five acres of ground near Flushing, L. I. The company will make extensive improvements including the construction of a large bulkhead and the widening of a creek which runs through the property. In addition to its asphalt business the firm will deal in lime, lath, brick, cement, and other building materials.

### SOUTHERN ENTERPRISE.

A. H. McDaniels, a building material dealer in Augusta, Ga., is supplying the waterproofing for the Aida Hotel, now being erected in his city, and showed a progressive spirit when he erected a sign three feet wide by 15 feet long advertising this fact and placing the sign on the front of the hotel building. The sign tells the passers-by that the substructure is waterproofed with Ceresit.

An amendment to charter of the Hercules Plaster Board Co., Inc., Hampton, Va., has been filed creating \$50,000 preferred stock.



## We can design Gravel Washing Plant to suit your own Requirements—

Every "S-A" Gravel Washing or Screening Plant is designed to meet special and peculiar conditions—it is designed *primarily* to pay on the investment. We study your market requirements, your probable future demands, your railroad facilities, as well as the character of your gravel, the location of the plant, etc. All these affect the financial success of the plant—and every one of our 250 plants has paid dividends on the investment.

Our Engineers are here  
at your service. Write

**Stephens - Adamson Mfg. Co.**

**Conveying Engineers**

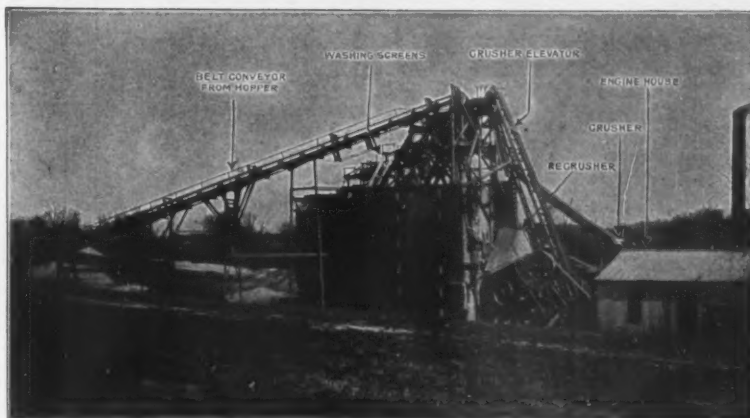
**AURORA, ILLINOIS**

NEW YORK  
BOSTON

CHICAGO  
LOS ANGELES

PITTSBURGH  
SALT LAKE CITY

ST. LOUIS  
TORONTO



The plant, shown above, was designed and built for a market capacity of four cars per day with an allowance for future increases. In one year, the plant had to be increased to handle ten cars daily and all extensions were paid for out of the season's profits. A steam shovel excavates the gravel and delivers into standard gauge cars hauled by a dinky locomotive. The cars dump into a track hopper from which the gravel is carried on the 24-inch by 175-foot inclined belt conveyor to the screens. The product is washed absolutely clean in "S-A" Gilbert Screens and is in great demand.

We design and equip Rock Crushing Plants, Sand and Gravel Washing Plants, Screening Plants, Storage Systems.

We manufacture Conveyors, Elevators, Transmission Equipment, Gates, Feeders, Car Pullers, etc.

## You Can Crush **A-Ton-a-Minute** With A Champion

We have been supplying townships and contractors with small jaw crushers for thirty years—let us call your attention to one of our giants.



**No. 20 CHAMPION CRUSHER**

Can be used as a primary crusher or for regular work.  
Capacity—500 to 1000 tons per day.

## Big Business Requires Big Machinery

Which will produce a regular output month after month, and which will be **ECONOMICAL** in its operation.

Our Engineering Department has been successful in erecting large plants.

We can furnish you with crushers in all sizes, mounted or unmounted, Bins, Elevating and Conveying machinery. Screens, Steam or Gasoline Engines, and all kinds of **ROAD MAKING MACHINERY**.

Our largest crusher has an opening of 50x72 inches. The No. 20 crusher a maximum opening of 24x50 inches.

We will be glad to estimate on your plant or to send you our complete catalog by return mail.

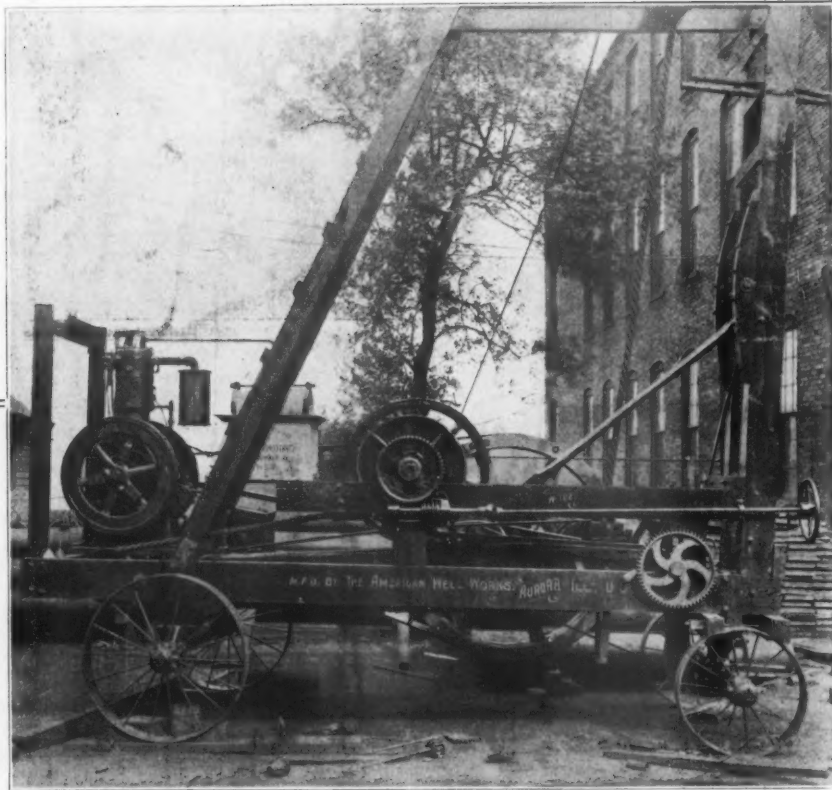
Write for Information to

**THE GOOD ROADS MACHINERY CO.**  
FORT WAYNE, IND.

NEW YORK, 50 Church St.  
BOSTON, 79 Milk Street  
MARATHON, N. Y.

Commercial Trust Bldg., PHILADELPHIA  
1632 Oliver Bldg., PITTSBURGH  
KENNETT SQUARE, PA.

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



## FOR THE QUARRYMAN

Equally as good for a "lift shot" as for a "face shot." A real blast hole drilling machine for quarries. Reliable, strong and economical in maintenance. Tests of costs and tests of service have proven the worth of this drill. Our cost tables of its operation will be gladly furnished upon application. Write today for our catalog and further information.

**The American Well Works**  
Aurora, ————— Illinois

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



## A Profitable Introduction!

(Profitable to all concerned)

*Scene*—A Building Material Dealer's Store.

*Hero*—A Wise Dealer.

*Audience*—Architects, Engineers, Contractors and Builders in the Dealer's vicinity.

*Dealer*—"Gentlemen, you all know our friend Cement, the best building material of the age, but here's another well known article I want you all to use. Ceresit, a water-proofing that you have read about in your trade and technical papers."



### Is a Dependable Waterproofer For Cement

"Use Ceresit with Cement, gentlemen, wherever conditions of dampness, water-pressure, or weather are to be met. You'll find it's the best and most dependable combination for absolute water tightness."

### Talk That Way, Mr. Dealer

Write for our liberal proposition on the territories still open. We'll also send you a copy of our "Book of Evidence," 1914 model, just off the press. It's a book that will interest and convince your customers.

— WRITE TODAY —

## Ceresit Waterproofing Company

924 Westminister Building, Chicago

Factories: Chicago; Una, Germany; London; Paris; Vienna; Warsaw

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



**—and huge condensed milk plants also find 5-ply UTILITY best!**

The Chapin-Sacks Co. of Washington, D. C., with condensed milk factories in Michigan, Indiana, New York, Pennsylvania, Illinois and many other parts of the country, use thousands and thousands of square feet of UTILITY—the only 5-ply wall board.

For properly condensing the milk, they require an absolutely air-tight compartment and so they build a room of UTILITY—even to the floor.

The enormous heat necessary to condense the milk into powder—maintained night and day for two week periods—has no effect on UTILITY; it is thoroughly heat-proof because of the 4 layers of high-melt-point asphalt with which the 5 tough fibre-board layers are joined.

## UTILITY

*The only 5-ply  
Wall Board*

In the Chapin-Sacks condensed milk plants, the UTILITY lined rooms are closed down for cleaning about every two weeks, thus giving this wall board lining a severe, change-of-temperature test. That their orders for UTILITY are constantly increasing is the best and most convincing proof of the satisfactory service it gives.

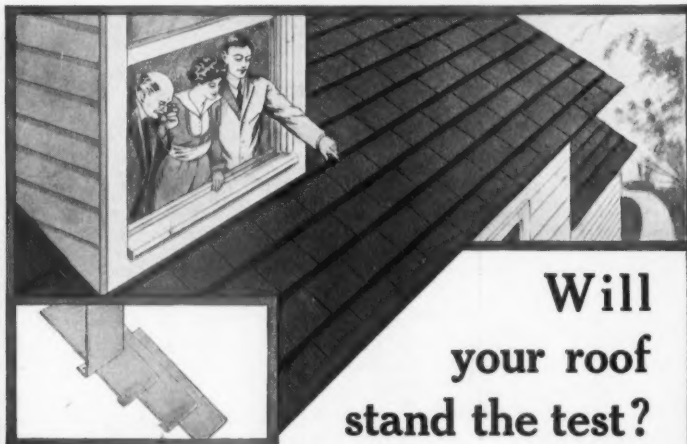
### Samples and Book Free

Test 5-ply UTILITY for yourself; let us send you free specimens and interesting UTILITY book today. Learn why this is the superior wall-board for every purpose. Write now—today.

## THE HEPPES CO.

*Manufacturers also of Flex-a-Tile  
Asphalt Shingles, Asphalt Paint  
and Asphalt Roofing in any Finish*

4539 Fillmore Street, Chicago, Illinois



**Will  
your roof  
stand the test?**

Think of this now, before you build or re-roof. How will your roof look ten to twenty years hence? How will it stand the cold and snow of Winter, the hot Summer sun, wind and driving storm? Then write at once for sample shingles, and full information about

## Rex-tile

TRADE MARK  
"The Scientific Shingle"

Rex-tile Shingles are 8" x 17½" with patented turn-under fold for nailing—shingles are fastened at bottom—no chance to flap or curl—all nails covered against rusting. They are fire-resisting; can't warp, split or crack.

Rex-tile Shingles are coated on both sides—laid triple-thick—giving three tough water-proof layers over every part of the roof. Soft dull red or blue-black slate—colors are a part of the shingle itself—no painting necessary—nothing to wash off, crumble or blow off. More easily laid than ordinary shingles.

Be sure to write today for samples and full information.

**FLINTKOTE MANUFACTURING CO., 89 PEARL ST., BOSTON, MASS.**  
*Manufacturers of the famous Rex Flintkote Roofing for factories, warehouses, farm buildings, etc.*

## Take the Profit of This Advertising

You have probably been reading our advertisements like the above now appearing in newspapers and magazines throughout the entire country.

Everywhere people are waking up to the need of a really satisfactory and scientific shingle, one that can be relied upon for long run service. This is just the right time to take advantage of public sentiment and share in the big success of

## Rex-tile

TRADE MARK  
"The Scientific Shingle"

Here are some of the points that help you sell Rex-tile Shingles:

Color is a part of the shingle itself. Nothing to blow off or wash off. Cannot streak or spot. Needs no painting. Soft dull red or beautiful blue-black slate.

PATENTED FOLD turned under at bottom for nailing. This gives a double rounded butt-end—covering all nails against weather and fastening shingles securely at bottom. Water cannot "back-up" or leak through. No chance to flap, warp, crack, buckle, or curl up. Absolutely wind proof. This feature is patented and exclusive.

Write today for special dealer's proposition and samples of Rex-tile Shingles. They tell the story.

### Flintkote Manufacturing Co.

91 Pearl St., BOSTON, MASS. 658 Peoples Gas Bldg., CHICAGO

*Manufacturers of Famous Rex Flintkote Roofing for factories, warehouses, farm buildings, etc.*

Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS

# CEMENT

## Has Cement Taken Up the Slack Which the Natural Increase of Population Should Have Provided?

The 1913 production of Portland cement in the United States was 93 million barrels, which was an increase of 12 per cent over the preceding year.

The estimated production for 1914 will be in excess of 95 million barrels.

On the basis of the 1914 production, which only allows for an estimated increase of 2 per cent, the daily production would be 260,274 barrels. On this basis, the following figures were made:

### Cement in Terms of B. M.

One barrel contains 2.96 cubic feet of neat cement.

If the cement is used in a concrete of proportion of one part cement, two parts sand and four parts broken stone or gravel, one day's cement production would build a walk one inch thick and six feet wide, 1,700 miles long, and would replace 53,712,600 feet B. M. lumber.

The total year's production would make a walk 620,500 miles long, or 25 times the circumference of the earth at the equator, and would replace practically twenty billion feet of lumber, or in exact figures 19,605,099 M. feet B. M.

Conceding the fact that in permanent works such as dams, building foundations, retaining walls, foundations for pavement, etc., timber is inadvisable for use, says The Timberman, and assuming, that 75 per cent of the cement output is used for such application, this would show that cement had a potential replacement of nearly five billion feet of lumber in 1913.

On the Pacific Coast the estimated 1914 cement production is equivalent to 7,400,000 feet of lumber daily, or 2,700,000 M. feet annually, which, on a basis of 25 per cent displacement, would equal 675,000,000 feet annually.

The cut of lumber in the United States in 1913 aggregated in round numbers about 38 billion feet. The output of cement, when reduced to board measure, on a basis of 95 million barrels, is equivalent to 19 billion feet, or practically 50 per cent of the cut of lumber. A comparison of the average increase of cement and average increase of lumber, as against the increase of population, reveals an interesting situation. The census of 1900 shows a population of 76,000,000, while 1910 shows 92,000,000, a gain of 21 per cent. On the other hand the average increase in lumber production between 1904 and 1912 is 14 per cent, revealing that increased population does not necessarily indicate greater proportionate consumption of lumber. Cement shows a gain between 1904 and 1912 of 220 per cent. The use of cement has not been without certain advantages to the lumber industry, as millions of feet of low-grade lumber goes into the construction of forms.

### NEW YORK CEMENT MARKET.

The local cement market continues very dull, but prices are firm on the basis of 90 cents a barrel, free on board mill. The restriction of important building operations in that city and the immediate vicinity is said to be responsible for the present dullness, the only real demand for cement at the present time coming from the subway contractors. It is said that some nice contracts have been let on the Lexington Avenue line this week, and that others would be let in the immediate future.

The Reliance Mill of the Giant Portland Cement Co., at Egypt, Pa., recently resumed operation after a shutdown of about two months for repairs.

The American Keene Cement Co. has been incorporated at San Francisco, Cal., with a capital stock of \$250,000 by H. McCullough, A. S. Blake, A. B. Dodd and C. McCullough.

Peter Carling, superintendent of the Edison Cement Co., at New Village, N. J., died May 14 of pneumonia at his home in Washington, N. J. Mr. Carling was 75 years of age.

The Dixie Portland Cement Co., at Sequatchie, Tenn., has just completed the forms for a new storage bin which will afford storage for 46,000 barrels of cement. Over 1,000 cubic yards of concrete was used in filling the form.

The Monarch Cement Co., at Humboldt, Kansas, is grinding away steadily, averaging 1,500 barrels of cement every day and finding a good market for all of it. The plant has excellent facilities for turning out a good product.

The Lumbermen's Cement Plant at Carlisle, just north of Iola, Kan., was recently sold for a consideration of \$41,000. It is said to have cost a considerable sum above this amount. L. L. Northup, for others, was the purchaser.

The Lord-Youn Engineering Co., of Honolulu, T. H., has secured the exclusive quarry rights in 40,000 acres of rock land on the Lyman Estate at Puna, Hawaii. Rock will be quarried for use in the Hilo, T. H., breakwater.

The Star Cement Co., of Riverside, Calif., has a large force of men and teams at work on part of the new Orange county highway, for which the contract was recently awarded. They will build three and one-half miles of road out of Fullerton that will cost approximately \$17,500.

That building has increased in Canada is shown by the fact that in 1912 the Dominion consumed 1,434,413 barrels of imported Portland cement, an amount larger than total importations of the three preceding years. In the same year there was an increase of approximately 1,450,000 barrels in the consumption of domestic cement.

A party of Philadelphia capitalists and the directors of the Giant Portland Cement Co. paid a visit to Lehigh county on May 22 on a mission that may have an important bearing on the cement industry in the future. They made the trip by special car. In the party were Colonel Harry C. Trexler and E. M. Young, of the Lehigh Portland Cement Co., and President Fehr, of the Lehigh Valley Transit Co.

The Standard Portland Cement Co. is making rapid progress in the new construction work at Leeds, Ala., which will double the capacity of the plant by July 1st, it is claimed. Five Giant Griffin mills, manufactured by the Bradley Pulverizer Co., Boston, Mass., arrived the middle part of May and are rapidly being installed. Other crushers are due to arrive within a short time. J. I. McCants, sales manager, states that his plant is working overtime to fill orders.

## Illinois Is Out of the Mud.

Two hundred and fifty miles of hard roads are to be built immediately throughout the state of Illinois under the Tice law, which gives state aid to each of the 102 counties for building better roads. Governor Dunne and an efficient state highway commission, after aggressive interest in this subject, have at last succeeded in getting every county in the state to accept the state aid.

Illinois has ranked twenty-third in the matter of good roads and yet has paid the second largest road tax. It has been a subject of vital importance to every citizen in the state, not only on account of the unnecessary taxation, in connection with these poor roads and their up-keep, but it means that the farmer may market his product more cheaply; that the now isolated farmer children will have an opportunity for better education; that community houses will be made possible; that the country wife and mother can visit her city neighbors, and that altogether it will bring the farmer and his family in closer touch with the people of the city.

In connection with the good roads success, the largest single order for cement ever given in the state of Illinois was awarded for Marquette Portland cement in the amount of 1,600,000 sacks, or 400,000 barrels, which will be used in 97 out of Illinois' 102 counties. This is surely a reward of merit. The Marquette Cement Manufacturing Co. has gained a reputation for supreme quality of product, prompt and courteous service, and these points could not be overlooked when the highway commission selected the material for this big contract.

If we are making an effort to reduce our road tax to a minimum we cannot afford to take chances on inferior material. The highway commission are to be congratulated on their upholding of quality in selecting Marquette Portland cement.

The citizens of Illinois owe a debt of gratitude to Governor Dunne and the highway commission for their efficient aggressiveness in putting the state of Illinois among the first states in the Union in the matter of good roads.

Peter Carin, superintendent of the Edison Cement Works, at New Village, N. J.; died at his home in Washington of pneumonia, at the age of 75.

The stock house of the Washington Portland Cement Co., at Concrete, Wash., was partly destroyed by fire the latter part of May, with a loss of \$45,000.

The Brantley Cement Co., Coffee county, Tenn., was incorporated recently with a capital stock of \$25,000. J. O. Campbell, M. R. Campbell, Jr., G. S. Lannon, Jr., and J. E. Brantley are the incorporators.

The Birdsboro Stone Co., near Reading, Pa., recently set off in one blast 6,600 pounds of dynamite which dislodged 150,000 tons of rock. The dynamite was placed in 11 holes drilled to a depth of from 60 to 93 feet. The shot cost \$1,500. The plant has a capacity of 3,500 tons a day.

The Reclamation Service recently closed a contract for 120,000 barrels of cement with the Southwestern Portland Cement Co. for the Elephant Butte dam and the canal system near El Paso, Texas. Of this amount 100,000 barrels will be used in the dam. All of the cement will be tested in a new laboratory to be established there by the government.



The market place of the building material industry. Employment department, machinery wanted and for sale, etc. If your wants are not answered in this page, write a letter to this office.

**THE FRANCIS PUBLISHING CO.**  
537 S. Dearborn Street Chicago, Illinois

# :: THE :: BOURSE

Advertisements will be inserted in this section at the following rates:

For one insertion.....25 cents a line  
For two insertions.....45 cents a line  
For three insertions.....60 cents a line  
Eight words of ordinary length make one line.  
Heading counts as two lines.  
No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

## EMPLOYEES WANTED

### GRAVEL SALESMAN WANTED

To take charge of sales of special quality of sand and gravel. For particulars address J. B. SPERRY, office 5 and 6 Marjorie Block, Battle Creek, Mich.

WANTED—Working foreman in lime plant using Doherty-Eldred kilns. Good wages. Steady work. Address Box 996, care ROCK PRODUCTS & BUILDING MATERIALS.

WANTED—Experienced superintendent for operating quartzite or granite quarry and crushing plant in Wisconsin. One with paying block experience preferred. Give full experience, references, salary wanted, and how soon can start. Address Box 997, care ROCK PRODUCTS & BUILDING MATERIALS.

WANTED—Experienced salesman on crushed granite and paving blocks. Familiar with Chicago territory preferred. Give full experience, salary wanted, references, and how soon can report. Address Box 998, care ROCK PRODUCTS & BUILDING MATERIALS.

WANTED—Foreman rock quarry in large cement plant, in New York State, steam shovel work. State age, experience and salary expected. Address Box 999, care ROCK PRODUCTS & BUILDING MATERIALS.

## BUSINESS OPPORTUNITIES

### AGRICULTURAL LIME AND CRUSHED STONE QUARRY FOR SALE.

A well-developed lime and crushed stone quarry in Eastern Tennessee, situated on the Southern Railway, of approximately 43 acres, is now offered for sale at a very attractive price on reasonable terms. A big market exists in the territory for agricultural lime. Modern road building is now going rapidly forward, which will make a good outlet for that product. Full information and details obtained by referring to file 47833 and writing M. V. Richards, Land and Industrial Agent, Room 371 Southern Railway, Washington, D. C.

### FOR SALE.

1,200 acres for \$50,000, containing 600 acres of heavy shale with good flux, on railroad near Augusta, Ga. Superb opportunity with growing southeastern market for clay products. Address H. C. MIDDLETON, Augusta, Ga.

FOR SALE—50 acres sand on D., L. & W. R. R., at Fox Hill, N. J., Morris County. If interested in buying same write G. VANHORNE, 311 Mt. Pleasant Ave., Newark, N. J.

STEEL SIDEWALK FORMS FOR SALE. 500 feet HELTZEL SYSTEM sidewalk forms, also curb and gutter forms. Excellent shape. Write HELTZEL STEEL FORM & IRON WORKS, Warren, Ohio.

**HIGH GRADE SILICA**  
**CLAY AND SAND**  
CRUDE-DRIED-GROUND CRUDE-DRIED-SCREENED  
**GEO. C. CROSSLEY**  
CROSSLEY STATION - TOMS RIVER, N. J.

## EMPLOYMENT WANTED

WANTED—Position as quarry superintendent; 25 years' experience in construction and operation of crushing plants. Would operate on percentage basis. Best of references. Address Box 1000, care ROCK PRODUCTS & BUILDING MATERIALS.

WANTED—Position as superintendent of lime manufacturing plant. Eight years' experience on all makes of kilns. Thoroughly conversant with quarry and crushers. Am capable of taking charge of any plant and getting best results. Employed at present. Address Box 993, care ROCK PRODUCTS & BUILDING MATERIALS.

## MACHINERY WANTED

WANTED—One second-hand Broughton 2000 lb. Mixer. Address Box 989, care ROCK PRODUCTS AND BUILDING MATERIALS.

## CARS & LOCOMOTIVES FOR SALE

### CARS.

156—5 yard 36-inch gauge all steel Peteler 2-way dump cars, built 1910 and '11. Thoroughly overhauled. Practically good as new. The best dump cars we have ever seen. We are putting these cars on the market at bargain prices. Write us for further information. Eight 36-inch gauge double-truck flat cars.

### LOCOMOTIVES.

Eleven—12x16 Porter four-wheel saddle-tank 36-inch gauge locomotives, built 1910 and '11, and used until the end of the season 1911; practically new.

One—11x16 Pittsburg four-wheel saddle tank, 36-inch gauge.

Thirty-five 9x14 Porter four-wheel saddle tanks, 36-inch gauge. Most of these have steel cabs and were built since 1902.

### STEAM SHOVELS.

Three—Marion Model 60 steam shovels, in excellent condition; ready for immediate shipment.

One—Bucyrus Model 65, with Model 70 front and applied. Thoroughly overhauled.

Two—Marion Model G shovels, in first-class condition. Also big lot steam shovel repair parts, and other contractors' equipment.

MINNESOTA EQUIPMENT CO., Hibbing, Minn.



## PLANTS FOR SALE

### FOR SALE! COMPLETE EQUIPMENT

For Cement and Plaster; Sand Drier, Mixer, Hairpicker, Block Machine, Bags, etc. H. E. PARROTT, Receiver for DAYTON FIBER PLASTER CO., Dayton, Ohio.

## MACHINERY FOR SALE

FOR SALE—One C. O. Bartlett & Snow Co. Direct Heat Rotary Dryer, 36x24, Style "M." Will sell for \$350 f. o. b. Dudley, Ky. Write or wire quick. WINCHESTER GRANITE BRICK CO., Winchester, Ky.

FOR SALE—One Kelly-Springfield Road Roller, standard style, three wheels. In good condition. A bargain. One Steam Hoist, 1 1/2 yd. capacity. Five 1 1/2 yd. Steel Quarry Cars. 100 tons 25 lb. T. Rails. Two 4" Centrifugal Pumps. Two 5" Centrifugal Pumps. One 6" Centrifugal Pump. Three Ingersoll-Rand Steam Drills. One 25 h.p. firebox Boiler. Four 2 yd. Troy Bottom Dump Wagons. THE LIMA STONE CO., Lima, Ohio.

Plaster Mixer, Hair Picker, Wood Fiber Machine; used but little; great bargain. LOCK BOX 571, El Paso, Texas.

## SALE!!

MARION STEAM SHOVEL, 2 1/2 cu. yd., Model "G" overhauled, in Chicago, immediate shipment.....\$2400  
THEW STEAM SHOVEL, 1 cu. yd., on traction wheels, shop number about 700.....\$2900  
THEW STEAM SHOVEL, 1 cu. yd., No. O, shop number over 800.....\$2600

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## BIG RETURNS

A partner is being sought for, in a new treatment which has been patented in this and foreign countries, for the manufacture of artificial stone, bonded by burning, out of waste material. The necessary machines are nearly completed. Also the patent can be sold and the license granted. Only interested parties please answer, care R. P. 1729, to the

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Tell 'em you saw it in ROCK PRODUCTS AND BUILDING MATERIALS



# CONCRETE

## AN ECONOMICAL METHOD OF NUMBERING FORMS.

The introduction of methods to reduce the cost of form work is an ever-present aim of the Aberthaw Construction Co., Boston, who by careful study have reduced the cost of their forms about 20 per cent in the last few years. One of the most recent schemes which has effected an economy is the simplifying and systematizing of the numbering of the various forms.

In previous work the Aberthaw company lettered the forms for beams and columns in reference to the compass, that is, if a form was to be used on the east side of the building it might be marked "BSE18," which would mean that it was for the beam side of beam No. 18 on the east side of the building. The bottom form of this same beam would have the symbol "BBE18." While this lettering was a decided improvement over any other method used, there were disadvantages and it was to eliminate the same that the present system was devised.

According to the present method each column is given co-ordination. The ordinates are numbered and the abscissae lettered, there being a key drawing the location of beam and column forms. In this system beam forms and column forms used under exactly similar conditions were numbered the same irrespective of their location. For instance, if the north side of a beam form was numbered 1, the south side, if it were an exactly similar form, would also be numbered 1, while the bottom side would be numbered, say, No. 2. Other forms would be similarly numbered although they might be located in another part of the building. In the case of columns, the letter "C" was prefixed to the number. If the forms for a column were marked C10, C11, and C9, forms for a similar column would be marked in the same manner though they might be located at another point.

It will be seen by this method many letters are eliminated from the symbol. In addition simplifying the numbering has avoided excessive lettering in the drafting room and serves time which might be spent on stenciling at the job. Furthermore, it quickens the time spent for locating a specific form for similar forms are all piled together.

In order to give some idea of just how hard it is to cut down the different kinds of forms to a minimum it should be noted that on the simple job in question there were more than 100 forms while every effort had been made to reduce this figure.

## CONCRETE CELLAR STEPS AND HATCHWAY.

### Construction of Permanent Steps and Watertight Walls.

A damp cellar under a dwelling is frequently the unsuspected cause of many a case of sickness. Often this dampness is the fault of a poorly built entrance-way. If water gains access by means of leaky hatchway walls, the cellar becomes unsanitary and the health of the entire family is endangered. This peril can be dispelled by making the walls and steps of concrete.

The methods of building hatchways for either new or old cellars are very similar. With an allowance for a three-foot landing at the bottom of the stairs, excavate the opening to the width of steps desired plus one foot. This extra width is for a six-inch thickness of concrete wall on each side. The steps themselves have a rise of six and a tread of nine inches. Beneath the steps proper is a four-inch thickness of concrete. Therefore provide for this thickness in sloping the ground upward from the landing to the top of the stairs. Extend the trenches for the side and end walls one foot below the concrete of the steps. As forms choose two 1 by 12-inch boards and notch them as though they were to be used as "horses" to support wooden steps of the same dimensions as those of concrete. Place the notched edges down with the ends fixed at the top and bottom of the stairs. To mold the rise of the concrete steps, use 1 by 6-inch boards 3 feet 10 inches long, which are secured to the forms by means of nails and wooden cleats.

With the forms firmly fixed in position, fill the mold for the bottom step, and the space back of it, with concrete proportioned 1 bag of Portland cement to 2 cubic feet of sand to 4 cubic feet of crushed rock. If bank gravel is used, mix the concrete 1 part cement to 4 parts gravel. Bring the concrete in each step to the top of the riser and finish the surface with merely a wooden float. Continue the work upward until all the steps are finished. At the top of the stairs tie the apron foundation to the side walls by means of old iron rods imbedded in the concrete and extending around the corners. This will prevent possible heaving and cracking by frost.

The side forms of the six-inch walls are then erected and are thoroughly cross-braced against

each other. For these forms use 1-inch siding on 2 by 4-inch studding spaced two feet apart. The walls can be carried to any height desired so as to give the cellar doors sufficient slope for shedding rain-water. Above ground line, outside forms must be provided. Fill the walls with concrete mushy wet. Before the concrete sets, bolts are placed (heads down and washered) in the top of the side walls for holding the wooden sills to which the cellar doors are hinged. After two to four days the forms can be removed. Connect up the drain in the landing and lay the landing floor.

The eight cellar steps of the hatchway shown in the plan have a tread of nine inches, a rise of six inches and a length of four feet. The clear height of the door-way in the cellar wall is six feet six inches. The landing at the foot of the steps is three by four feet and has a four-inch concrete floor. This same thickness of concrete lies under the steps proper. The side walls were built as described above. For this improvement there were required the following quantities of materials.

### Bill of Materials.

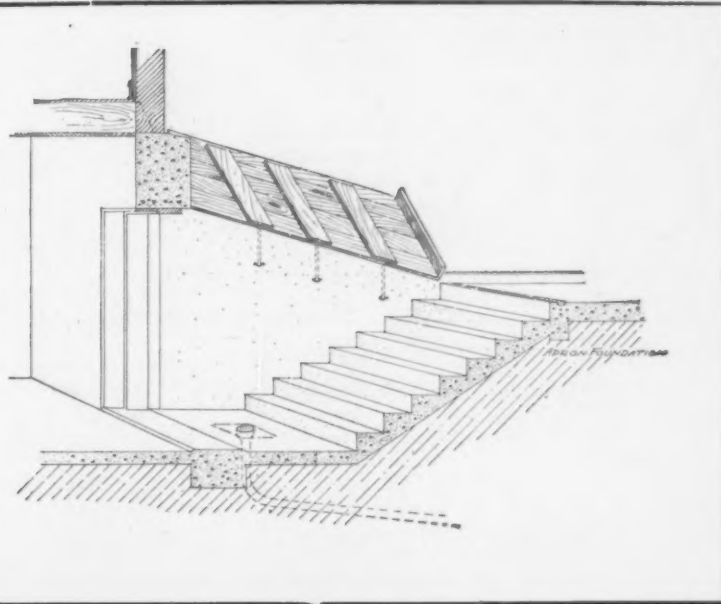
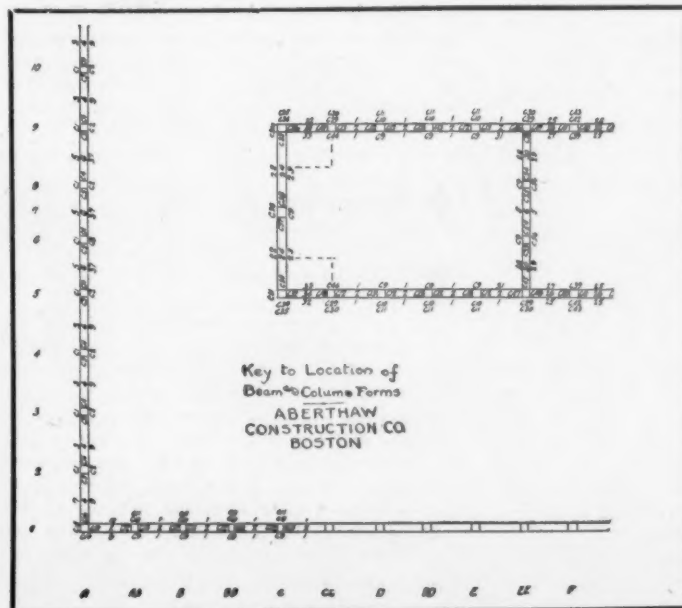
Crushed Rock.....	2½ cubic yards
Sand .....	1¼ cubic yards
Portland Cement.....	12 bags

For improving old cellar hatchways it is frequently necessary to fill with earth and gravel so as to provide the earthen slope for the concrete steps. Such filling must be thoroughly tamped into place and should be water-soaked and allowed to settle before the steps are built.

Concrete steps, unlike other kinds, become stronger with age. They are perfectly safe under the heaviest of loads.

## THE MOYER JOINT PLATE.

Albert Moyer, 250 Fifth Avenue, New York City, has recently invented the Moyer Concrete Joint Construction Plate. This joint plate is made of open hearth soft steel which wears down to the same ratio as the concrete. It is said to protect absolutely the edges of the concrete so that they cannot spall. No installation device or machine is required and the legs are bent down and the side tongues bent outwards by means of a piece of short pipe, this operation being done on the job. They are then wired together and clamped with tar paper in between. The legs are driven in the sub-base of the wood so that the top of the plate will be at a level with the top of the finished concrete, made certain by using a duplicate of the template which will be used in crowing the concrete. The template is merely set in the side frames and the plate hammered down until the bottom of the template will rest accurately on the top of the plate.



# CLAY PRODUCTS

## Specifications for Drain Tile.

A. Marston, dean of division of engineering, Iowa State College, has prepared the following:

Tile drains, either clay or concrete, 36 inches in diameter, are now common; those of 48 inches are not unknown, and it is with these large sizes that cracking occasions the most trouble. The need of standard specifications, designed to prevent cracking and minor mishaps, has been recognized by the American Society for Testing Materials, which three years ago appointed a committee to make the investigations and collect the data prerequisite to the compilation of such specifications. It has just completed a series of 600 strength tests and has under way extensive absorption studies at the University of Wisconsin. The principal topics on which information is being sought are:

1. The adoption of standard loads for different depths and widths of ditches and varieties of soil which drain tile are liable to have to carry.
2. The determination of a factor of safety which experience with sound pipe in actual ditches has shown to provide reasonable safety against cracking.
3. The division of drain tile into classes A, B, C, D, etc., as has already been done with water pipe, and the specifying of the minimum bearing strength per linear foot for each class.
4. Limits of depth and width of ditches for each main variety of soil where drain tile of each class may be used without special precaution in laying.
5. An additional allowance, possibly stated as a percentage, which shall be granted for care in laying equal to that given in the best sewer construction practice.
6. A specification permitting the use of drain tile in depths and width of ditches exceeding the limits specified in topic four.

## Philadelphia Brick Notes.

Philadelphia, Pa., June 3.—Ralph F. Channell, local representative of the American Enameled Brick Co., says: "Conditions with the local end of the business is comparatively satisfactory. Our company was awarded several large contracts for its products through the Philadelphia office. Among these was one for the enameled brick to be used in the construction of the Farmers' National Bank building at Wilmington, Del.; the Presser home, this city; a new school building at Forty-seventh and Locust streets, and a swimming pool and gymnasium at Ansecon, N. J."

William Conway, the well-known brick manufacturer, whose plant is located at Fifty-fifth and Locust streets, has added to his equipment a five-ton truck which is to be used in the delivery of brick to buildings in the city proper. The new truck has a self-dumping body, a capacity of 2,500 bricks per load and an average speed of 12 miles an hour when fully loaded.

## A HOUSE THAT IS FIREPROOF.

Fire Chief Croker, of New York, has built a residence on Long Island which he believes to be fireproof. The walls are of hollow tile, the roof of tile, the floor of ornamental tile, suited to the different rooms, the chimneys are of hollow brick, with walls two bricks in thickness and with a separate flue for each fire. The stairs are of concrete composition and the floor tiles are laid in a similar composition. The doors, mouldings and

balustrades are of steel, painted in accordance with the decorative scheme. There is nothing combustible in this catalogue. The costs are not given, but Mr. Croker believes that in the long run the selection of these durable materials will be an economy, as there will be small upkeep costs and no insurance.

The era of inflammable homes seems to be passing. The example of Mr. Croker is particularly noteworthy because so few men of means have seemed to think it worth while to consider fire risks. The vicinity of New York has been visited lately by fires that have destroyed palatial residences costing half a million dollars or upwards. The mania for great size in residences ought to have run its course ere this. Size should be secondary to permanence and appropriate design.

## Louisville Brick Concerns Busy.

Louisville, Ky., June 3.—The East End Brick Co. has just leased a tract of 40 acres some four miles south of the city on the Southern railroad, owned by P. M. Crane, its secretary-treasurer, and later in the season will erect a plant there with a capacity of 40,000 soft mud brick a day. The company is just finishing up the supply at its present location in the eastern part of the city, having converted what was, in Civil War days, Spring Hill Fort, a Federal entrenchment thrown up when the Confederate general, Buell, threatened the city.

Business is good, it is reported, with the Louisville makers of hard common and face brick. The demand for the output on one of the local plants was so insistent last week, for instance, that the manufacturer had to remove his brick from the kilns before they were cool and then had to turn the hose on them after they were loaded, so as to keep them from setting his wagons on fire. This was rough on the brick, but seemed to be required.

A new stable which will accommodate the 16 head of horses and the company's wagons is under construction for the Hillenbrand Brick Manufacturing Co., which operates one of the old Hydraulic Brick Co.'s plants south of the city on the Poplar Level road. An interesting point developed in connection with the recent breaking of the mould at this plant: the concern is using an old Lion dry press, which is still giving satisfactory service after 24 years of almost constant use.

The Alliance Clay products Co. has started preliminary work on its new plant at Alliance, Ohio.

A new concern at Johnstown, Pa., is Hiram Swank's Sons, which has been organized by Albert F., Milton and R. L. Swank to manufacture and sell all kinds of brick.

The Bessemer Limestone Co., will soon have completed a new brick plant at Bessemer, Pa., which will cost about \$300,000. This will be the biggest year in the company's history.

The Salina Coal & Clay Co., of Salina, Ohio, has bought about 1,200 acres of land near that place and will build a mammoth clay working plant at once. Geo. B. Brennan is president of the company.

Elmer A. Evans, of Zanesville, Ohio, was recently elected president of the National Paving Brick Co., capital \$400,000, which was organized in April to take over the affairs of the Harris & Stone Zanesville Brick Works.

## Kansas City Brick Demand Active.

Kansas City, Mo., June 6.—Manufacturers of paving brick should have little difficulty in disposing of their output, judging from contracts recently awarded in Kansas and neighboring states. Most of the brick paving was promoted by the Western Paving Brick Manufacturers' Association, of this city, which has been extremely active along this line. George W. Thurston, secretary of the association, has announced the awarding of several large contracts. In addition to promoting brick paving all over the Southwest, the association is about ready to handle a unique competitive paving contest on Sixth street, Kansas City. So much heavy traffic is in evidence on that thoroughfare that the municipal authorities have been a good deal perplexed over the paving to be used. It was planned to have paving brick, creosote blocks and stone blocks laid, and close watch kept on their powers of durability. The stone block manufacturers have indicated that they will not enter the contest and the makers of the other material named will divide the space.

Little common brick is being shipped into Kansas City at present, local manufacturers apparently being able to take care of current demand. All of the local common brick makers are working to capacity.

The Lyle Rock Co. is operating two plants with an aggregate capacity of 40,000.

Spalding & Taylor recently leased the Doorn plant and are turning out 20,000 daily.

Elliott & Godfrey are making the same number, while the Vale Brick Co. expects to put its new plant into commission shortly.

The Liberal Stone & Brick Co. also is planning to begin work soon.

Face and paving brick are being brought in in quantities, the local branch of the Hydraulic Press Brick Co. being one of the few local plants of this nature in operation.

## SAN FRANCISCO TO PAVE WITH BRICK.

San Francisco, Cal., June 6.—The city of San Francisco is now entering on an era of brick paving. Some brick paving has already been laid on First and Powell streets, and contracts aggregating 1,300,000 paving brick either have been or will at once be let for work to be done on Third, Sixth and Van Ness streets. So far, all the contracts have gone to the Denny-Renton Coal & Clay Co., of Seattle. The brick is shipped by water from Seattle to San Francisco.

The Sacramento Clay Products Co., of Seattle, Wash., is installing a \$6,000 brick making machine and will put up two additional kilns.

The Southwestern Clay Products Co. has been incorporated at San Diego, Cal., with a capital stock of \$200,000 by W. H. Brown, B. A. Weyl, Carrol Allen, Louis M. Cole and P. Pressley, all of Los Angeles.

The Cleveland Vitriified Brick Co. has donated 30,000 bricks to be sold for the benefit of the fund being raised by the Oklahoma Panama Exposition Commission to put an exhibit at the Panama-Pacific International Exposition at San Francisco in 1915. The bricks will be sold at \$5 each and the name of the buyer molded in the brick, which will be used to build a state historical building on the capitol grounds; the funds derived from the sale to be used at San Francisco for the Oklahoma building and exhibit.



# Sand and Gravel

## Louisville Concern Finds Motor Truck Economical.

The advantage of the motor truck to sand and gravel concerns is markedly illustrated in the case of the Ohio River Sand Co., of Louisville, Ky. The sand and gravel business is especially fitted to use trucks for the reason that the advantage of the truck over the horse-drawn vehicle lies in the fact that it can travel faster and longer distances with a greater economy of power, and where no time is lost in loading and unloading it is being operated at its highest efficiency. All that the truck has to do to load is to run under the sand or gravel hopper, halt a minute while the box is filled and run onto the scales before starting on the delivery. The delivering is a simple matter of releasing the right lever, which the driver can do without leaving his seat, and in pulling away from the dumped gravel. It takes longer to get the receipt ticket signed than to unload six tons of sand.

An example of the efficiency of this truck as the Ohio River Sand Co. uses it may be shown by reference to what is a half-day's work. For instance, the first thing the other morning was a delivery of four yards of gravel to a concrete job at Hickory and Burnett streets, about 30 city blocks away and over streets where the car was subject to the delays incident to all traffic. This trip out and back was made in 40 minutes. Twice after that the truck made a trip with five yards of sand each time to a job at Fourth and N streets, 32 blocks out from the plant, and the time for each trip was one hour and nine minutes, identical, it happened, each time. The morning being still comparatively young, two more trips were made to Campbell street and Broadway, 16 blocks away, though the truck was subject to delays by congestion in that section.

According to the way distances average in Louisville that morning saw the truck cover slightly more than 30 miles, an average, not allowing for stops and delays, of a little better than six miles an hour, loaded and unloaded. On each of the five trips it was loaded to capacity—six tons—or, in other words, it carried 20 cubic yards of sand and four of gravel, or an amount that it would require 12 wagons to transport. Figuring out the comparison a little further, the 12 wagon loads would have had to be drawn on an average a little more than two miles and a half. Assuming that one team would do two such trips in half a day, the truck was doing the work of at least six teams and the one driver for the motor was taking the place of six teamsters.

## IMPORTANT FREIGHT RATE RULING PENDING.

Important rulings on freight rates between San Francisco and nearby points and clay and sand shipping districts are expected from the California State Railroad Commission on or about June 10th. The rulings are expected to define sand and clay and to distinguish between the two for shipping purposes as well as fix equitable rates for both between the shipping at Ione, Clarksonia, Yaru, Lincoln, Carbondale, Clay Springs and Valley Springs, and various manufacturing points on San Francisco Bay and at San Jose, Cal. The Steiger Terra Cotta & Pottery Works, of San Francisco; the Pacific Coast Pottery & Terra Cotta Co., of San Jose, and other users of clay and sand are asking for reductions, while the Southern Pacific Railroad Co. is asking for adjustments and advances in certain cases. At a preliminary hearing last week

W. E. Dennison and R. P. Thompson, of the Steiger terra cotta works; John S. McNab and E. D. Clark, of N. Clark & Sons, San Francisco; J. Roberts, of the Firebrick & Tile Co., Stockton, Cal., and Seth Mann, of the San Francisco Chamber of Commerce, appeared in opposition to the railroad company.

## NEW GRAVEL PLANT WILL USE ELECTRICITY.

The Northern Gravel Co., Muscatine, Iowa, is now ready to begin the operation of its new plant on Muscatine Island. The large elevator has been constructed and also the pit into which the gravel will be pumped. The motors have all been installed and the last lot of machinery for the place arrived a few days ago.

A large barge has been constructed which is equipped with a 100-horsepower electrical motor.



TRUCK USED BY THE OHIO RIVER SAND CO., INC., LOUISVILLE, KY.

This will pump the gravel into a large concrete pit near the end of the elevator. While being pumped into this pit the sand will be separated into different grades, and as soon as it is in proper condition it will be taken from the pit by an elevator and placed into the large automatic handling station which has been constructed. The cars will be loaded from this as they are needed.

The new electrical line now under course of construction will handle direct current. For this reason the power could not be taken from any of the small lines which supply power in South Muscatine. Several new side tracks will be laid immediately after the starting of the plant in order to facilitate the handling of the cars.

## ASKS PERMIT TO MINE RIVER SAND.

The Yohola Sand Co., of Muskogee, Okla., recently appealed to the corporation commission for an order requiring the Frisco railroad to accept shipments of sand which it has been taking from the Arkansas river.

The company states that the railroad has refused to furnish it cars or accept any sand for shipment, giving as a reason that the concern has no lease from the state on the river bed. The sand company says it has made application to the state school land board for a lease, but can secure no action upon it and that it has orders for 60 cars of sand along the line of the Frisco which it cannot deliver.

T. W. Rogers and Henry Stone have opened a gravel quarry at Glen Farm, Ia., near the M. & St. L. tracks and are finishing a siding for the commercial handling of the product. They intend to install a steam shovel and derrick that will load direct from the pit to the cars and will have such other facilities as the business will require. The company has named the place "Sand Siding" but billing will be done at Humboldt Station, Ia.

## Arkansas to Charge for Sand.

### Corporations Must Pay for Gravel Taken from Streams, Says Supreme Court.

The right of the state to charge for sand and gravel taken from a river bed is upheld by an opinion handed down by the Supreme Court the latter part of May, in the case of the Arkansas against the Southern Sand & Material Co. The opinion reverses the lower court, which sustained a demurrer by the defendant.

The case grew out of an attempt to enforce the law passed by the legislature in 1913, providing that all sand taken from a river bed should be paid for at the rate of 4 cents a cubic yard and all gravel at the rate of 5 cents.

The Southern Sand & Material Co. refused to pay, on the ground that the beds of rivers belong to the people and are only held in trust for the people by the state. They held that the law levied an unjust tax on the defendants.

The Supreme Court held that the law does not levy a tax, but only charges for a special privilege. The court pointed out that only corporations should be made to pay, and that all that was necessary for individuals who wish to remove sand to do is to notify the attorney-general.

Swanson & Co., of Galesburg, Ill., are opening up an extensive gravel bed south of Buda. It owns ten acres of an almost inexhaustible supply of gravel.

The Northern Indiana Gravel Co., of Howe, Ind., has been incorporated with a capital stock of \$10,000. The directors are Henry M. Cooper, Stephen T. Cooper and Frank J. Duntan.

Rimpler & Bolles is a newly organized firm in Goshen, Ind., handling a fine grade of rock and gravel from Pleasant Lake. Much of its product is disposed of in Detroit, where it is used in road building.

The Phoenix Sand & Gravel Company, New York, N. Y., has ordered one 4-wheel saddle tank locomotive from the American Locomotive Company. This locomotive will have 10 x 16 in. cylinders, 30 in. driving wheels, a total weight in working order of 38,000 lb., and a steam pressure of 165 lb.

The large plant of the Northern Gravel Co., at Muscatine, Ia., has been practically completed, but up to the latter part of May had not been started because of the non-completion of the new transmission line which will furnish power for the concern. A large crew of men are now engaged in laying numerous sidetracks in the vicinity of the pit in order to facilitate the handling of cars. The plant will have an output of about 30 carloads per day.

The Quincy Sand Co., of Quincy, Ill., is having a spur track built and a trestle constructed out into the bay for a distance of several yards. Barges can then be floated alongside the trestle and by means of a clamshell bucket can be unloaded into a car or wagons in a very short space of time. The track is supported by piling driven into the ground every 16 feet. At the river's edge it is 16 feet above the ground, leaving ample space for wagons and teams to drive under.

# With the Quarries

## The Selection of Materials For Macadam Roads

By Logan Waller Page, Director U. S. Office of Public Roads — Read at American Road Congress, Held at Detroit, Mich., Sept. 29 to Oct. 4, 1913.

Of all the factors which go to make up the perfect macadam road, there is undoubtedly none more potent than that of the suitability of the material which enters its construction. A road may be located, drained and constructed along the very best lines and according to the most approved methods and be a total failure if the material of which it is built has been poorly chosen. It is perhaps not too much to say that large sums of money are wasted annually in this country because too little importance is attached to this phase of the road problem. The engineer is then, at the very outset, confronted with the important problem of selecting the most suitable material for his work, and on the care with which he performs this task depends in a large degree the success or failure of the road he is to build. The purpose of the present paper is to discuss in some detail the methods which may be used in approaching this problem, with special reference to the value of laboratory tests as an aid in the selection of suitable materials for roads.

There are two ways in which the engineer may avail himself of the information necessary to a proper selection of a road material. The first and only certain one is to make an actual service test on the material under observation, and under the same conditions of traffic and climate to which the proposed road will be subjected. This method is, of course, impractical except in certain rare instances, due to the length of time which must elapse before definite results can be obtained. The second method is by means of short time laboratory tests to approximate as nearly as possible the destructive agencies to which the material will be subjected on the road, supplementing the knowledge thus gained by a study of the results already obtained in practice on material of a similar nature.

The laboratory testing of road building materials originated in France over forty years ago, and was introduced into this country by the writer in 1893, when he became Director of the Road Material Laboratory of the Lawrence Scientific School at Harvard University. The United States Government became interested in this work shortly afterwards, establishing, in 1900, a laboratory in the Department of Agriculture, at Washington. This laboratory is now a part of the Office of Public Roads, and has thus been able to give much assistance throughout the country in regard to the proper selection of material for macadam roads.

The three most important properties which a rock should possess in order that it may successfully resist the destructive agencies to which it is subjected are hardness, toughness, and cementing value.

Hardness, from the road builder's point of view, may be defined as the resistance which a rock offers to the displacement of its surface particles by friction. It is well illustrated in practice by the grinding action of iron tired vehicles which tend to reduce to dust the rock fragments of which the road is composed. This property is determined in the laboratory by a special method, the essential features of which are as follows:

### Laboratory Testing.

A core 25 mm. in diameter is drilled from a sample of the solid rock by means of a core drill. After being accurately weighed, it is held in a perpendicular position against a cast steel disc revolving at the

rate of thirty-three revolutions per minute, while crushed quartz sand of a standard size is fed upon the disc to act as the abrasive agent. After one thousand revolutions of the disc, the core is again weighed, the loss calculated, and a measure of the hardness of the rock thus obtained.

Toughness, or resistance to impact, is a measure of ability of a road material to resist the pounding action of traffic such as is caused by the shoes of horses, etc. It is determined in the laboratory in the following way:

A cylindrical test specimen of the rock 25 mm. by 25 mm. is taken from the core used in the hardness test, and subjected to the impact of a two kilogram hammer through a spherical end plunger in a machine especially designed for the purpose. The test consists of a one centimeter drop of the hammer for the first blow, followed by an increase in the drop of one centimeter until failure of the test piece occurs. The height of blow at failure is taken to represent the toughness of the specimen.

The combined effect of the mechanical agencies causing wear is very effectively determined by means of the Deval abrasion test, which has been the standard for over thirty years, and which is conducted essentially as follows:

Five kilograms of the rock to be tested is broken so as to number as nearly as possible fifty pieces, and is placed in an iron cylinder, mounted in such a way that the axis of the cylinder is inclined at an angle of thirty degrees with the axis of rotation of the machine. After ten thousand revolutions of the machine at the rate of thirty-three per minute, the material is taken out and sieved through a 0.16 centimeter sieve, the material passing being that used in calculating the percentage of wear.

The cementing value of a road stone is that property which causes the fine rock dust to act as a cement and thus bind the coarser fragments of which the road surface is composed into an impervious shell. A laboratory test to determine this property was devised several years ago by the writer, and is conducted substantially as follows:

Five hundred grams of the material to be tested is broken to about pea size, and placed, together with a sufficient quantity of water, in an iron ball mill. Five thousand revolutions of the mill reduces the mixture to the consistency of a stiff dough, which is moulded by means of a hydraulic moulding machine into cylindrical briquettes 25 mm. by 25 mm. in size. After drying twenty-four hours, these briquettes are tested by impact in a machine especially designed for the purpose. A one kilogram hammer falling upon an intervening plunger, which in turn rests upon the test piece, is allowed to drop from a height of one centimeter until failure of the specimen occurs. The number of blows causing failure is used to represent the cementing value of the material.

It will readily be seen from the foregoing that a very accurate preliminary idea of the properties of a road stone may be obtained by means of laboratory tests. Many years' experience in testing these materials have made it possible to adopt certain standards of excellence which, when used intelligently and in conjunction with the other factors in the case, are of much value in selecting suitable materials for water-bound roads.

The results of laboratory tests alone, however,

are not sufficient to judge of the suitability of a rock for road building purposes, unless supplemented by additional information as to, (1) the character and volume of the traffic to which it is to be subjected, (2) climatic conditions under which it is to be used, and, (3) its name and general character, including, if possible, its mineral composition. In addition to the above, consideration in any specific instance should be given to such matters as the availability of the material, especially with reference to cost, transportation facilities, etc.

The value of taking these factors into consideration will be briefly illustrated below.

It is a well-known fact that a given road rock is far from being equally well suited to different traffic conditions. A high-grade trap rock would be as unsuitable as it would be uneconomical on a road subjected to light traffic, in that the dust worn off would not be sufficient to bind the coarser fragments together, and the road would consequently ravel. On the other hand, the comparatively soft limestone which would be well adapted for the light traffic road would quickly pound to dust if subjected to conditions which would hardly affect the trap.

As a general rule, it may be said that the ideal rock for any particular road should be just so hard and tough that the fine material worn off by the action of traffic would be sufficient to supply that lost by the physical agencies of wind and rain. By correlating the information obtained by observing the behavior of the various rock types under different traffic conditions, with the results of laboratory tests on material similar in character, it has been found possible to determine quite definitely under just what conditions any given material would be most suitable, even before it had ever been used in road construction.

Many years of observation of the behavior of the various road building rocks in service has demonstrated the fact that, as a general rule, certain classes of material possess for particular purposes distinctive advantages over others. It is obviously of advantage, therefore, to know the general type of the material under observation, in order that an intelligent comparison may be made between it and the material of a similar nature which has already been used. The different varieties of trap, for instance, such as diabase, basalt, etc., are generally considered to make the most satisfactory road material, especially when the traffic is heavy enough to supply by wear the dust lost from natural causes. The limestones, as a class, being softer and less tough are, as a rule, better adapted for light traffic than the traps. Laboratory tests in these cases are, therefore, mostly of value in enabling the engineer to make a definite choice between a number of materials which in a general way might be considered as suitable for his work.

The granites, owing to lack of toughness and cementing value, are, as a rule, only suitable for the foundation courses in plain macadam construction. Here the value of taking into consideration the character of the rock tested may be illustrated by the fact that frequently granites are found by laboratory tests to have good cementing values, due to highly altered minerals, when, as a matter of fact, such material should not be used on account of the ease with which it disintegrates under traffic.

Foliated material, such as gneiss, schist, slate, etc., should never, of course, be used when better material is available. Material such as quartzite and marble should also be avoided, the first on account



of its hardness and lack of cementing value, and the second because of its crystalline structure and general lack of durability.

#### Availability of Materials.

The availability of various materials considered for use in road construction should, of course, be considered, and is highly important, especially from a financial standpoint. In considering this point, however, care should be taken not to lose sight of the other factors in the case. Experience has shown in innumerable instances where poor material has been used because it was cheap that money would have been saved in the long run by the use of a superior rock, even though shipped from a distance and costing considerably more at the outset. There are cases, however, where local material may be used advantageously. It is in such instances as these that engineering judgment, combined with laboratory results, is necessary for proper selection.

An accumulation of data resulting from the great number of tests made on road building rocks in the Government laboratory has quite recently made possible some very interesting investigations concerning the relation between the properties of hardness and toughness. By plotting numerous values of these tests, it was found that, in a general way, hardness increases with toughness and that, whereas for low values of toughness the hardness was extremely variable, as the rock became tougher the hardness showed less and less deviation from an average of the plotted points. The significance of this fact is that the property of hardness appears to be invariably associated with that of toughness, although the reverse is not the case. It seems, therefore, that for a quick determination of the qualities of a road building rock, the hardness test might possibly be omitted, since material which satisfactorily passes the toughness requirement invariably appears to be hard enough for use in road construction.

When rock is to be used in bituminous construction, the importance of some of the above-mentioned tests is diminished. The cementing value, for instance, may be practically disregarded when the use of an artificial binder removes the necessity for dependence upon a dust bond. A tough rock is, of course, preferable, and more especially when the surface is to withstand the shock of heavy traffic, but both toughness and percentage of wear become less important in the body of the road with bituminous construction when the surface is maintained by occasional surface treatments to preserve a wearing mat with a hard and tough aggregate.

#### Dust Preventatives.

Since public health and comfort have universally demanded an abatement of the dust nuisance, and economic maintenance is correlated with their demands, a few words on the selection of dust preventives and road binders can not be out of place in a discussion of materials for macadam roads. The selection of a form of treatment or construction must be governed by a full consideration of the volume and character of traffic which the road surface is called upon to carry. In rural sections where a macadam road is subjected principally to the average farm traffic and a relatively small number of automobiles, a surface which is in good condition at the outset may be economically and satisfactorily maintained by an occasional application of one of the lighter dust laying tars or oils. The purpose in a case of this character is simply to preserve an already good surface by keeping the products of wear saturated with a material that will prevent them from being removed from the road surface. This purpose is readily best accomplished by a product that is not possessed of marked binding qualities—a material that will not pick up nor "ball" when mixed with dust only. Hygroscopic salts and other non-bituminous dust preventives have also served the purpose successfully where climatic conditions favor their particular characteristics.

The value of a simple dust preventive decreases, however, with an increase in the volume of automo-

bile traffic, and a more permanent form of wearing surface then becomes necessary. Up to a certain limit, and particularly on park roads, this character of traffic is successfully provided for by means of an annual surface treatment of oil or tar covered with cleaned screenings or fine gravel. For cold surface treatment, the oils which give particular satisfaction are the natural or partially refined products which, through laboratory tests, are shown to consist of low-boiling constituents carrying in solution a relatively high amount of heavy adhesive asphaltic base. For most successful surface treatment, it is essential that an oil shall develop decided adhesive qualities in the residue from the standard volatilization test at 63° C. Tar products should be free from water, and it is believed that their value for surface treatment increases with the decrease in the free carbon content.

#### Resurfacing.

When the traffic becomes of such a character and magnitude as to cause a too rapid deterioration of a surface mat, the macadam must be constructed or resurfaced with a heavy binder as an integral part of the upper two or three inches of the wearing surface. The selection of a binder, whether it be a tar than will a poorly graded one; or a lighter tar or several factors, among which the method of construction, character of the aggregate, and climatic conditions are most important. For instance a dense aggregate may permit of the use of a lighter tar than will a poorly graded one; or a lighter tar or softer asphalt product would be specified for northern latitudes rather than for use in the south. A single standard for all materials and conditions cannot, therefore, be established, but with the various factors in mind, a specification can be drawn to cover the consistency and desirable chemical characteristics. In fact, in the purchase of road materials for whatever purpose it should be to the advantage of the producer as well as a protection to the consumer, that a definite specification be required. All shipments when received should be submitted to laboratory tests that will insure fulfillment of these specifications.

### National Old Trails Road Association Holds Third Annual Meeting.

Indiana Good Roads Association and Road Department of D. A. R. Hold Joint Sessions.

A meeting of the National Old Trails Road Association was held in Indianapolis, Ind., May 7, 8 and 9, in connection with the Indiana Good Roads Association. The attendance was not quite as large as was expected. However, there were present many interested and well-posted representatives, men and women, from ocean to ocean. Governor Ralston felicitously welcomed the visitors on behalf of the state and Mayor Bell on behalf of the city. Many interesting addresses were made during the sessions.

Mrs. Caleb S. Denny, prominent in many uplift movements in Indianapolis, and who as a member of the Daughters of the American Revolution has always taken a very active part in the Old Trails Road Association, gave an address on May 8 during the fourth session, which was keenly appreciated. Mrs. Denny dwelt upon the sentimental features regarding the restoration of the old pioneer trail.

While the speakers did not advocate government or state appropriations to be used in improving any line of road that is not thoroughly practical, yet the women who represented the D. A. R. organization emphasized the sentimental feature which attaches to the restoration of the old pioneer trails. Among this number may be mentioned Miss Elizabeth Butler Gentry and Mrs. S. Denny.

Among numerous other speakers were Judge Lowe, of Kansas City; Senator W. A. Alsdorf, of Ohio; Hon. James P. Eagelson, of Washington, Pa.;

former Mayor Bookwalter, of Indianapolis, and Prof. W. K. Hatt, of Purdue University.

The officers elected for the coming year are: President, Judge J. M. Lowe, Kansas City; vice-president, Rev. Harvey M. Shiels, Dawson, N. M.; secretary-treasurer, Frank A. Davis, Herrington, Kan.

The next annual meeting will be held at the Grand Canyon, Ariz., in May, 1915. It is expected that many scores of automobile parties will make the trip overland on that occasion from all sections of the trail routes.

### JEFFREY MFG. CO. TO DEMONSTRATE LIMESTONE CRUSHING.

The Jeffrey Manufacturing Co. has taken 20 booths at the Home Products Exposition, to be held about the statehouse yard at Columbus, Ohio, the week of June 8, and is planning for one of the most novel displays which has ever been seen in that city.

The company will pulverize limestone and give away 100-pound sacks as "souvenirs." It will build a coal mine and show how its new machinery is revolutionizing the business of mining coal. It will have another mine in which it will show how the modern miner works with drills run by machinery before he "shoots" his coal, and in another section of its space will show its automatic loader at work.

The automatic loader is a portable device for loading coal on wagons, and carries its own power with it. As coal would be broken to pieces by showing how it handles coal, it will be used to handle rock and gravel in the display.

#### Show Use of Lime.

To every farmer within a radius of 50 miles of Columbus whose name can be obtained, the company will send a personal letter of invitation to come and see the combination limestone crusher and pulverizer at work. The gospel of "liming the soil" has been spread by the agricultural experiment station at Wooster, and the company will show how every farmer may get his own lime. The experiment station will be asked to send a man to assist at this exhibit.

The letters sent to farmers will invite them to bring their own limestone to the exhibit if they wish to have it chewed up and returned to them ready for the soil. The pulverized product also will be analyzed for those who wish, by either Ohio State University or the Wooster experiment station. Another exhibit will be of the Jeffrey company's electric locomotives.

### DIRECTORS OF INDIANA ASSOCIATION MEET.

An open meeting of the Board of Directors of the Indiana Crushed Stone association was held at the office of the secretary, 823 Hume Mansur building, Indianapolis, Ind., May 14, with the following officers and members present: President Herman H. Evans, Lafayette, Ind.; Vice-President E. B. Taylor, Greencastle, Ind.; Treasurer R. N. Van Winkle, Indianapolis; directors, O. H. Binns, Logansport, and E. T. Milligan, Muncie; C. W. McKee, general manager, Erie Stone Co., Huntington, Ind., and L. B. Hodgkin, president Kokomo Stone Co., Kokomo, Ind.

A great deal of interest was manifested at this meeting by the different members for the welfare of the association in general.

John R. Cahill, of San Francisco, has secured a contract for the installation of a rock crushing plant of 125 tons capacity per hour for the Kern County Highway Commission near Bakersfield, Cal. It will include McCully jaw crushers for the primary work and McCully gyratory crushers for the secondary work as well as necessary screens.

# LIME

## I. C. C. Renders Interesting Decision.

### Complicated Features Attached to the Laying of Spur Track Extensions.

Milwaukee, Wis., May 29.—According to news received from Washington, D. C., railroad attorneys in that city interpret the decision of the supreme court in the case of the Union Lime Co. of Fond du Lac, Wis., vs. the Chicago & Northwestern Railroad and the Eden Lime Company of Eden, Wis., as an obstacle to the authorization by the Interstate Commerce Commission of allowance to railroads of charges for spotting cars on private sidings. This question has aroused the apprehension of many leading Wisconsin manufacturers, who are opposed to the proposition of allowing the railroads to charge for this service and who filed protests with the Interstate Commerce Commission.

The United States supreme court upheld the Wisconsin law and the state railroad commission's order for right-of-way on land of the Union Lime Co. for the construction of a spur track for the convenience of the Eden Lime Co. The Union Lime Co. held that its track was not for public use. On this point, the court said:

"The assignments of error come to a single point as to the character of the use. The state, through its highest court, declares the use to be a public one and we should accept its judgment unless it is clearly without ground. Common carriers may not be compelled to make unreasonable outlays, it is competent for the state, acting within the sphere of its jurisdiction, to provide for an extension of their transportation facilities under reasonable conditions so as to meet the demands of trade and it may impress upon these extensions of the carriers' lines thus furnished under the authority or direction of the state a public character regardless of the number served at the beginning. The branch or spur comes into existence. A public utility, as such, is always available as localities change and communities grow. The supreme court of Wisconsin has left no doubt with respect the public obligations imposed upon the carrier in relation to the spurs or branches to be provided under the statute in question, and we find no ground for the conclusion that the enactment was beyond the state's power."

## Commercial Limestone Products.

The Agricultural Experiment Station of the Pennsylvania State College has analyzed, from time to time, a considerable number of samples, submitted by those interested as purchasers, and purporting to be representative of various commercial limestone products. These analyses are given in the following table. Owing to the private source of the samples, the station does not vouch that each of these samples correctly represents the commercial product whose name it bore. The analyses are, however, published as representing substantially, the composition of the samples received, and, in a general way, the condition of the limestone products of the several commercial classes now sold on the Pennsylvania markets.

Owing to the indefinite meaning attached by many to the commercial names of the several limestone products in agricultural use, these names are here defined.

When limestone, which is chiefly composed of calcium carbonate (carbonate of lime,  $\text{CaCO}_3$ ) is heated to red heat, its carbon dioxide ( $\text{CO}_2$ ) splits off as a gas, leaving a white or nearly white solid of slightly

greater volume than the original stone. This burned solid is lime (Calcium oxide,  $\text{CaO}$ ). Magnesium carbonate (carbonate of magnesia,  $\text{MgCO}_3$ ) is usually present in the limestone in larger or smaller amount. When the limestone is burned, the magnesium carbonate gives off carbon dioxide gas and leaves the white solid magnesia (magnesium oxide,  $\text{MgO}$ ). By appropriate chemical methods, the oxygen can be extracted from these oxides, leaving the respective metals, calcium (Ca), a yellowish body of metallic luster, and magnesium (Mg), the white metal sold in ribbons or in powder. These metals are not, however, used as such for agricultural purposes.

When water is added to the lime ( $\text{CaO}$ ), it is absorbed with much heat, and the lime swells and falls to a fine powder. In this condition, it is called slaked lime, or, when carefully made by the aid of machinery, hydrated lime (Calcium hydrate,  $\text{Ca(OH)}_2$ ). Any magnesia in the lime tends likewise to form magnesium hydrate ( $\text{Mg(OH)}_2$ ), but the change is slow, and little heat is manifested. Hence, highly magnesian limes slake slowly, are "cold-slaking," swell little or not at all, and sometimes do not fall to pieces.

When lime is exposed to the air it slowly absorbs moisture and becomes hydrated. It also absorbs, but more slowly, carbon dioxide (carbonic acid), from the air, and recarbonate; that is, returns in part to its original state of combination as calcium carbonate. In the case of the magnesia, the process is much slower, and the carbonic acid is a basic carbonate ( $\text{Mg(OH)}_2$ ,  $\text{MgCO}_3$ ). Lime thus slaked by air exposure is said to be air-slaked. The interior of large lime heaps does not recarbonate for years.

In addition to the determinations corresponding to the chemical nature of the several classes of commercial limestone products, the lime and magnesia value of each product, in the condition in which it was received, is given. This value determines the final utility of the materials for soil neutralization. Of course, the pure lime (or magnesian lime) has the highest value; while those products containing large proportions of inert matters, carbonic acid, or water (free or combined), must have correspondingly lower value.

Fort Towson White Lime Co., of Fort Towson, Okla., has been incorporated with a capital stock of \$10,000. Incorporators: Clarence Marsh, F. J. Cline, W. S. McKinney, of Fort Towson.

The Corressley-Miller Engineering Co., of Canton, O., has prepared plans for a hydrating plant 50 x 30 feet for the O. C. Barber Lime & Fertilizer Co., of Canton, O. The new plant will be built at Howestein, Ohio, and will cost about \$100,000.

In the vicinity of Horse Cave, Ky., Thee Bybee has opened up a lime kiln and quarry and is preparing for a large output. The lime, it is said, is of the highest quality, the rock test having showed an average of 94 per cent lime. Mr. Bybee recently made his first shipment from his kilns.

The Henry Cowell Lime & Cement Co., of San Francisco, furnished the cement which entered into the construction of the new and modern Traveler's Hotel at Sacramento, just opened to the public. The company's famous Mt. Diablo Portland cement was used, as well as its well-known Marble Valley lime for the interior of the building.

The Powhatan Lime Co., Strasburg Junction, Va., has installed a 15-inch head package to be used exclusively to meet conditions confronting them at the Baltimore market.

Andrews & Co., a Norfolk concern, are preparing to erect and operate near Newbern, N. C., a plant to manufacture lime from the oyster shell rocks which are to be found in abundance a few miles above the city. Tests have proven that these shells make an excellent grade of lime.

Charles P. Light, field secretary of the American Highway Association, recently returned to Washington, D. C., from Philadelphia, where he attended the conventions of the manufacturers of road material and the American Water Works Association, at which there were about 1,000 manufacturers, street and road officials in attendance. He found great interest manifested in the Fourth American Road Congress, of which he is business manager, and which will be held in Atlanta, Ga., early in November.

Smith, Emery & Co., chemical engineers and chemists of San Francisco and Los Angeles, announce that Carlton R. Rose, for a number of years superintendent of the United States Zinc Co., Pueblo, Colo., subsidiary to the American Smelting & Refining Co., has recently resigned his position and become an associate of Smith, Emery & Co. Mr. Rose will be located in San Francisco and will take an active interest in the business. His strong and pleasing personality and varied experience in university work and practical accomplishment will add materially to the strength and range of the firm.

## THE SONG OF THE ROADS.

### I.

Wandering off through the wood,  
Dim as a mist-veiled star  
Past where the wigwams have stood,  
Wandering, wandering far;  
Highway for hunting and war,  
Down where the sunbeams glow pale  
Through the leaf-laden branches that bar—  
This was the Indian trail.

### II.

Child of the Indian trail,  
Formless, uncouth and unplanned,  
Traveled by pioneers hale,  
Westbound, with rifle in hand;  
Leading through newly cleared land  
To the White Man's new, rough-hewn abode,  
Rough as the pioneer band—  
This was the pioneer road.

### III.

Inadequate, wasting away,  
Sport of the winds and the rains,  
Object of pride yesterday,  
Shameful, today, its remains!  
What can we show for our pains?  
Trails without structure or grade,  
Binding the land as with chains—  
These are the roads we have made.

### IV.

Level, hard-surfaced, unworn.  
Proof 'gainst the heat and the cold,  
Gift to the peoples unborn—  
Long shall the story be told  
Of the builders, far-seeing and bold,  
Unselfish and patient and skilled,  
Who wrought them in days then grown old—  
These are the roads we shall build!

—Gordon Wilson.



# Builders' Hardware

## The Two Essentials For Success in the Manufacture of Sand-Lime Brick

Paper Presented by Mr. H. S. Spackman, of Philadelphia, Pa., at the Tenth Annual Convention of the Sand-Lime Brick Association, December 9th and 10th, 1913.

These essentials, as I see them are: first, quality; second, large output and consequent low cost of production.

Some of you may think that improved quality of necessity means increased cost, and, therefore, is not compatible with the low cost of production. I hope, however, to prove the contrary by showing you that improved quality is largely the result of proper management, which, in turn, means larger production and lower cost.

The history of the sand-lime brick industry as reflected by the statistics published in the Mineral Resources of the United States, compiled by the United States Geological Survey, would seem indicative of failure; the number of manufacturing plants having fallen from 94 in 1907 to 66 in 1911, and the value of the product from \$1,225,769 in 1907 to \$897,664 in 1911; the production falling from 173,069,000 in 1907 to 142,630,000 in 1911. But to those who read between the lines, and have followed the proceedings of your association, it is in reality a prophecy of success, for the industry has passed from the domination of the promoter, who secured his financial return, not from the manufacturing and sale of the brick, but from the sale of the machinery or stock, into the hands of men who expect to make their money from the sale of the brick. 1911 marked the low water stage, I believe, in the industry, the reports for 1912 showing 71 plants in operation, or an increase of 5 over 1911, and a production of 174,361,000 brick, or an increase of 31,731,000.

To the promoter, except in the florid pages of the prospectus, quality is a minor matter. To you, to whom your stockholders look in many cases to make good the promises of the promoter, it is a vital need—not only to the individual manufacturer, but to the industry as a whole—for the shipping of an inferior lot of bricks and their consequent failure in the work, hurts each and every one of you individually and collectively almost as much as it does the actual manufacturer and shipper, and adds to the sales cost of every thousand sand-lime brick produced in the United States.

This is an era of standardization. Every industry of importance sets for its members a standard below which their product must not fall. What the associations of the steel and iron trade, the cement trade, and many of the manufacturers of clay products have done in this respect, you must do; and the day when it becomes no longer necessary for the sand-lime brick manufacturer, when soliciting an order, to explain that his bricks are not like those made by the other fellow, will be the day that the sand-lime brick industry will take its proper place among the established industries in this country.

At the meeting of the American Society for Testing Materials, held at Atlantic City in June, there was presented by a committee made up of representatives of the clay brick manufacturers, engineers and large users of brick, as well as government experts, a series of specifications for the several grades of building brick; and these specifications set the measure of quality to which your product must conform if it is to compete in the market with clay brick on an equal price basis, and

which it must excel if it is to be given preference. These requirements are:

### Class B—Hard—Burned Brick.

Average compressive strength, not less than 3,500 pounds per square inch.

Minimum compressive strength of any specimen in test, not less than 3,000 pounds per square inch.

Average absorption, not more than 12 per cent.

### Class C—Common Brick, First.

Average compressive strength, not less than 2,000 pounds per square inch.

Minimum compressive strength of any specimen in the test, not less than 1,800 pounds per square inch.

Average absorption, not more than 18 per cent.

### Class D—Common Brick, Second.

(These bricks to be used only for backing-up and for interior walls involving small loads.)

Average compressive strength, not less than 1,500 pounds per square inch.

Minimum compressive strength of any specimen in the test, not less than 1,200 pounds per square inch.

From the tests during the past year on various lots of sand bricks submitted to our laboratories by our various clients, it would appear that few, if any, manufacturers in this territory, turn out a product that will meet the specifications for Class "B"—Hard Burned Brick—which requires an average of 3,500 pounds per square inch, with no brick showing a strength of less than 3,000 pounds. The majority of the bricks submitted, however, do meet the specifications for Class "C"—Common Brick, first, and some meet the specifications for Class "B"—Hard Burned Brick.

In order to meet these specifications for hard burned brick, or first-grade building brick requires that in the future you give to quality your first thought. Your sand must be carefully scrutinized and tested for granulometric composition and freedom from the injurious ingredients, not once, but frequently, for the character of the sand in the pit often varies. The lime must be analyzed to see that it is of proper composition, well burned and completely hydrated. The mixing of the lime and sand must be thorough and uniform. The brick in molding must be subjected to equal pressure throughout, and the condition of your green brick as they go to the cylinder must be such that not only each brick, but each portion of every brick, consists of a uniform homogeneous material, compressed to maximum density. You must also see that the steaming is carried out under uniform conditions at all times, and that the pressure of the steam and duration of exposure is that best calculated to give the highest strength and durability to your finished product.

This may seem a somewhat formidable list of requirements, but with the exception of chemical tests from time to time, the physical tests involve no technical work that cannot be carried out by a man of average intelligence.

(To be continued.)

## Kansas City Operations Improved.

Worcester, Mass., June 2.—With every indication that building in Worcester will be active this season, builders have begun to turn their attention to the various building materials necessary. Brick is coming in for particular attention.

Worcester is a good market for face brick and nearly every kind is sold by the local dealers. Builders this year are demanding non-absorbent brick.

The Worcester Sand Lime Brick Co., with a factory in West Auburn, is bringing the new brick into the Worcester market. It is a sand-lime brick, made by the pressure process. These brick delivered on the job brings \$12.00 per thousand, while common brick is now selling at \$8.00 per thousand. Philadelphia pressed brick at present is bringing from \$28.00 to \$35.00 per thousand on the job.

## IMPORTANT USE OF SANDSTONE BRICK.

As an example of the beautiful exterior effect which may be gained by the use of sandstone brick may be cited the new Traveler's Hotel at Sacramento, Cal., which has just been opened to the public. The hotel represents an investment of nearly half a million dollars and is modern and fireproof throughout. The building is "E" shaped, of concrete and steel, built upon concrete piles driven to a great depth, and is faced with Sacramento sandstone brick manufactured by the Sacramento Sandstone Brick Co. The Ransome Concrete Co. was the general contractor. It is seven stories high, with a basement. The total street frontage is 160 feet on Fifth street and 90 feet on "J" street. The hotel contains 266 rooms, of which 177 have shower and tub baths. The exterior is a light cream in color, broken by green on the two marquees.

## SAND-LIME BRICK GAINING POPULARITY.

The introduction of sand-lime brick in the Western states has an example of success with the present operations of the Acme Brick and Sand Co., of Milwaukee, Wis. This company, entering into its third year, is supplying the brick for a number of the most important buildings under construction in Wisconsin. The buildings include three large high schools, two churches, and several large factories and stores. This indicates the advancing popularity of the product in that state. The Acme plant is operating to capacity and the stock is shipped as rapidly as produced.

The Chickamauga Cement & Lime Co., of Chattanooga, Tenn., is considering the addition of a stone crushing plant to its Rossville, Ga., mills.

The Composite Brick Co., Jacksonville, Fla., is meeting with unusual success with their product, and the result of tests made on the Composite company's material has given them a firm footing in all building operations in Florida.

The Yankton Brick & Tile Co., of Yankton, S. D., are now erecting a sand-lime brick factory for a capacity of 20,000 brick per day. The American Clay Machinery Co. is engineering the plans for this factory, and the plant will be American Clay throughout.

The Boston Berkshire Composite Brick Co., of Boston and Medfield, Mass., are now beginning work on the installation of their new factory, located at Medfield Junction, Mass. The American Clay Machinery Co. has secured the order for the complete equipment, which will consist of four rotary presses. This plant will be operated under the silo process in conjunction with wet grinding mills. The factory is being built for a capacity of 100,000 brick per day.

# GYPSUM PRODUCTS

## Hot Weather Hints To Plasters

Manufacturers of plaster realize that contractors and plaster workers have a great deal of trouble during the hot weather and contribute this entirely to the ignorance on the part of the men applying the plaster. Every manufacturer and dealer wants to assist the purchasers of their material whenever possible and with this object in view the U. S. Gypsum Co. has published a little pamphlet entitled "Hot Weather Hints for Plaster People." In order that retailers might benefit from the experiences which enable these manufacturers to publish such valuable documents when most needed, we print it below just as it appears in the pamphlet.

mixing and application water is the chemical force that causes recrystallization, or "setting up." The plaster of Paris in the mortar changes back into gypsum rock.

### Hot Weather Hints.

**Lathing**—If wood lath are used apply them properly—space them  $\frac{1}{4}$  to  $\frac{3}{4}$  inch apart. Break joints every fifth or seventh lath. Do not allow ends of lath to overlap or butt; leave space between ends at least  $\frac{1}{4}$  inch.

**Air Precaution**—Before applying plaster all openings should be screened with cloth or other means of preventing blasts of hot air from drying up the water in the plaster. U. S. G. plaster will set, no matter how long it holds if it is kept from drying out before it sets. If it does dry out before it hardens, spray

body of mortar and it will not set until enough water has been thrown on it to thoroughly wet the lath and leave enough to set the plaster. Moral.—Wet down the lath and use the proper coat of plaster.

Use a clean water-tight mixing box. Keep your tools clean. Use clean water in mixing. Beware of water from ponds, cisterns or other stagnant water. Water from wells or hydrants is best. If sand is to be added, use clean sharp sand free from dirt, mineral matter, or quick sand. Do not oversand; follow our directions.

Do not retemper any material after it has started to set. Throw it away.

**Caution**—After plaster has set open windows or doors and allow free circulation of air to dry out moisture expelled from the plaster. In damp or rainy seasons provide artificial or other means of drying out the rooms, after plaster has set. This is important:

### "Quick" and "Slow Set."

U. S. gypsum plaster is not sent out unless it measures up to a set standard of quality. For this reason "quick set" or "slow set" in U. S. G. plaster is invariably due to local causes. Where hurried or quick action is required the following remedies may be employed.

**Quick Set**—Caution.—Do not confuse dried out mortar with "quick set" mortar; distinguish carefully. The former crumbles between the fingers, while the latter feels hard and firm. In case of "quick set," if "U. S. G. retarder" is not quickly obtainable, in an emergency dissolve one pound of pulverized glue in one gallon of hot water. Thoroughly mix this solution into the water that is to be used in mixing the plaster, using the proportion of one pint of the solution to the water required for each sack of plaster.

**Slow Set**—If the material is too slow in setting it can be hastened by scraping well the sides and bottom of the mixing box, or by using water for mixing from a barrel in which pieces of set up mortar have been soaked for two hours or more. Ordinarily the above remedies will suffice. If, however, quicker setting is necessary use "U. S. G. accelerator" according to directions accompanying it. If this is not obtainable, mix 4 pounds of alum or 2 pounds of commercial zinc sulphate to a barrel of water using from 10 to 12 quarts of the solution to the water necessary to mix each bag of plaster, varying this proportion to the amount of plain water used as conditions require.

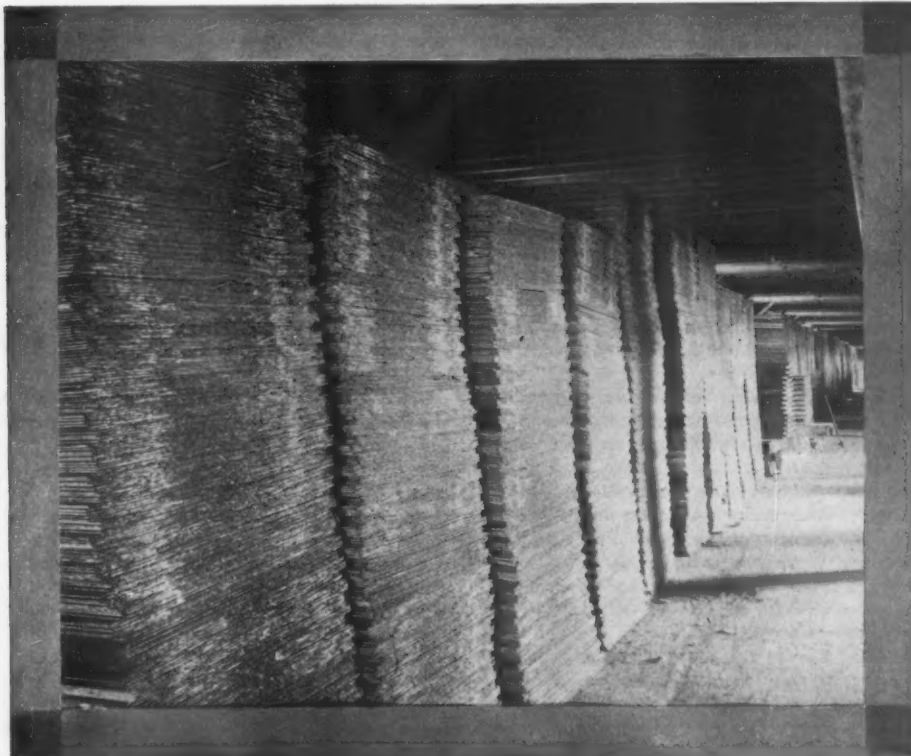
## One Million Square Feet Per Day

In the last issue of ROCK PRODUCTS AND BUILDING MATERIALS was mentioned the fact that the Oakfield, N. Y., plant of the United States Gypsum Co. had a capacity of 5,000,000 square feet of Sackett plaster-board per year. The linotype machine was evidently short of ciphers, as the figures should have been 50,000,000 instead of 5,000,000. The Oakfield plant of the United States Gypsum Co., which is located directly over what is said to be the finest gypsum deposit east of the Allegheny mountains, is able to turn out a remarkably large quantity of gypsum products to supply the plaster trade of the east.

In connection with the output of Sackett plaster-board at the Oakfield plant, it is interesting to note that the combined capacity of the various plants of the United States Gypsum Co. is over 1,000,000 square feet per day.

## LOUISVILLE PLASTER MARKET IMPROVED.

Louisville, Ky., June 3.—The improvement in the tone of the local market is noticed by the wall plaster men as well as in the other lines. With them, as with the others, the fact that most of the orders have been for small lots had a tendency to lead them to think that business was not up to what it should be. The frequency of the small orders, however, has brought the total amount of business done well up. Of the Louisville wall plaster dealers, both B. J. Campbell & Sons and the Kentucky Wall Plaster Co. are doing a satisfactory business.



METHODS OF STORING "SACKETT" PLASTER BOARD. THE NUMEROUS STACKS INDICATE THE SUPPLY NECESSARY TO MEET THE DEALER DEMAND.

Every dealer should avail himself of every opportunity to learn why certain materials will not work as they should. It is largely due to the ignorance of the men who are being paid for doing the work and apparent defects should not be charged to the materials. By carefully examining the merits and possibilities of certain materials, dealers will acquire sufficient information to enable them to correctly instruct contractors and plasterers to proceed along the proper lines. The plaster pointers of the U. S. G. Co., which tell how to avoid plaster troubles, are as follows:

These pointers apply to cement plaster, wood fibre plaster—any kind of hard plaster containing Gypsum. The observance of these suggestions is just as important to secure first class satisfactory result, and to make the mechanic's work smooth and easy, as are the general instructions for mixing and applying. Read them carefully.

It is well to bear in mind that U. S. G. wall plasters are made from pure rock gypsum. Rock gypsum is part water—about 20 per cent of it. In the manufacturing process the water is taken out; it is then no longer rock gypsum—it is plaster of Paris. In the

the wall with water or sprinkle liberally with a brush. Give it plenty of water.

**Thirsty Lath**—Remember that wood lath get very thirsty in hot, dry weather and require a lot of water. If this thirst is not quenched before hand they will drink up the water that belongs to the gypsum—absorb it right out of the plaster—and prevent the plaster from setting properly, frequently causing soft or chalky spots.

**Wet Down the Lath**—Wet them thoroughly—all over—every spot. Do this the night before if convenient, or at least four hours before plastering—give them a chance to soak. Then sprinkle them again about one hour before plaster is applied.

**Don't be Alarmed**—Plaster should not dry out before it sets. But don't be alarmed if it doesn't set up on schedule time. Keep damp till set. Should it show signs of drying out before setting spray with clean water. Soft or chalky spots, when dry, mean lack of water. Sprinkle them—give them plenty of water, and the wall will come out sound and hard. A weak solution of 3 or 4 ounces of zinc sulphate to a pail of water, thoroughly whipped in with a brush or sprayed, is very effective in hardening soft or white spots.

**Thin Coats**—If the plaster is applied too thin the dry lath will quickly absorb the water from the small



# PROPOSED LIEN LAW FOR STATE OF NEW JERSEY.

(Continued from Page 14.)

ments and deductions, and the balance justly due the claimant.

II. When, and in so far as, the claim is based upon performance of an express contract, the bill of particulars will be sufficient if it states such performance substantially in the same manner that the contract stipulated for it, the price in as general a manner as the contract terms in that behalf admit, and the date upon which the performance stipulated for, was completed or terminated.

III. Such bill of particulars, and the statements therein contained, shall be verified by the oath of the claimant, or his agent, who shall specifically state that the amount claimed therein is justly due for labor performed or materials furnished (for either or both, as the case may be) for erecting, building, adding to, altering, repairing or removing (any or all of these, as the case may require) the building in such claim described at the times therein stated.

IV. No debt shall be a lien by virtue of the provisions of this act in any of the following cases:

A. If the bill of particulars in the lien claim for such debt, or in any amendment thereof, contains any willful or fraudulent mis-statement of the matters above directed to be inserted therein.

B. If the lien claim for such debt is not filed in the matter above required, within four months from the date of the last work done or materials furnished for which such debt is due; and

In each such case the building and lands, which otherwise might be liable therefor, shall be free from any lien for such debt.

V. In case of the death of the builder before such lien claim is filed, he shall none the less be named and styled as the debtor and builder therein; but of such deceased builder was also the owner, or in the event of the death, before claim filed, of the owner who was not also builder, the lien claim shall name and style, as owner, the persons who are, at the time such lien claim is filed, the heirs or devisees, or other successors in title, as the case may be, of such deceased owner.

VI. In case the person, entitled to file a building lien claim, dies before his lien claim is filed, such lien may be claimed and filed by such decedent's executors or administrators; provided it be filed within the period of four months hereinbefore limited therefor; or, within thirty days after such death, when, at the time thereof, such period of four months has not fully elapsed, and the unelapsed remainder thereof is less than thirty days.

## Section 6.

I. Every county clerk shall, at the expense of the county, provide a suitable, well bound book, to be called the lien docket, in which upon the filing of any lien claim he shall enter:

A. The name of the owner upon whose building and estate the lien is claimed.

B. The name of the builder or person who contracted the debt.

C. The description of the building and lands, as stated in said claim.

D. The amount claimed and by whom claimed.

The county clerk shall make a proper index of each such entry in the name of the alleged owner, and he shall be entitled to 12 cents for filing each lien claim and eight cents per folio for each such entry in the lien docket and six cents for every search in his office for such lien claim.

## Section 7.

I. The tract, curtilage, or lot upon which a building is located or to which it appurtenant is to be determined as follows:

A. If the owner, by any map, or by enclosure or other visible monuments, or by any other means, has indicated or declared to the world the boundaries thereof, and the same, as so indicated or declared, is such a parcel as is commonly used in its locality as a building lot for such a building as the one then in question; such indication or declaration, in the absence of controlling proof to the contrary, shall be taken as determining the true boundaries of such tract, curtilage, or lot; but

B. If not determined by such indication or declaration as aforesaid, the true boundaries thereof must be ascertained by determining how much, and what, of such owner's lands is necessary and proper to the convenient and beneficial enjoyment of the building which, in each case, is in question.

## Section 8.

I. Before any suit is pending in which his rights may be adjudicated, any lien claimant, of his own motion and as he may be advised, may amend the lien claim that he has filed, in any matter, either of form or substance.

II. Such amendment, or amendments, shall be made in writing and verified by the oath of the

claimant, or his agent, as to all of the statements therein contained, and shall be filed and docketed in the office of the proper county clerk, who shall receive the same fees therefor as for filing and docketing an original claim.

III. Upon the filing of such amendment or amendments, and in the absence of any fraudulent or wilful mis-statements either in such original claim or any amendment thereof, the lien claim shall be deemed to operate, as against those who are in nowise prejudiced thereby, as though it had originally been framed as thus amended; but no such amendment or amendments shall be of any force or effect, as against any one who has acted in good faith before they are filed and who would be prejudiced thereby.

IV. No lien claim shall be deemed to be amended by a later claim filed by the same claimant, unless such later claim is plainly expressed to be an amendment of the earlier one; and where a claimant files successive lien claims, without so expressly amending the earlier by the later, he shall be conclusively deemed to have waived the earlier and put his rights upon the later one, in so far as he claims in both for the same labor or materials.

## Section 9.

I. After a suit is pending in which rights under a lien claim may be adjudicated, such claim shall not be in any wise amended without leave therefor first granted, upon due notice by the court in which such suit is pending; but such court is hereby given plenary power, upon the application of any party interested, to grant leave to amend the same, in any matter, either of form or substance, as it shall deem just and equitable; and the order granting such leave, operating between the parties to such suit as such court shall direct, and specifying with particularity in respect of what, and in what manner, such lien claim is thereby amended, as soon as a certified copy thereof is filed in the office of the proper county clerk (who shall record the same in the lien docket and properly index the same and enter a reference thereto on the margin of the entry of such original lien claim, for the usual fees for such service) shall operate, as to all persons, not parties to such suit, and who are in no wise prejudiced thereby, as though such lien claim had originally been framed as thus amended; but shall be of no force or effect, as to such persons, not such parties, as have acted in good faith before such amendments are filed, and would be prejudiced thereby.

II. Such order shall be deemed as made in the cause, and shall be reviewable, on appeal.

## Section 10.

I. When a claim is for labor or material bestowed or supplied for two or more buildings of the same owner, or for two or more buildings of different owners, the claimant in the first case may, and in the second case must, apportion his claim among said buildings in proportion to the value of that which he has bestowed or supplied for each, and state, in the bill of particulars in his lien claim, the amount so apportioned to each building.

II. When such a lien claim is filed, it shall be enforced in a single suit but shall operate upon each such building, and its appropriate curtilage, as though that for which claim is made, in respect of each, had been bestowed or supplied separately therefor; and

If such claimant has released one or some of such buildings he shall not thereby be precluded of his right of lien against any other such building and its curtilage which he has not expressly also released; and if barred of his lien against one or some of such buildings by the due filing of a contract relating to the same, he shall not be precluded of his right of lien against any other such building and its curtilage which is not the subject matter of such filed contract, in respect of that for which he claims.

## Section 11.

I. All lien claims which, by virtue of the provisions of the third section of this act, are liens upon the same building and the same estate in the land, whereon such building is located, or to which is appurtenant, for any labor or materials, shall be concurrent liens, and shall, if perfected by lien claim duly filed, as hereinbefore prescribed, be paid *pro rata* out of the proceeds of such building and estate, when sold by virtue of this act:

Provided, that the perfected lien claims of journeymen or laborers, for the wages due them for their labor, shall, as a class, be preferred and paid before anything is paid upon any other lien claims, which are not claims for such wages.

## Section 12.

I. Except as otherwise below in this section stated, the lien given by this act shall bind the estate which the owner of the building had therein and in the lands upon which it is located, or to which it is appurtenant, as the commencement of such building, or which he subsequently acquired, subject only to all mortgages and other encumbrances, created and re-

corded, or registered, prior to the said commencement of the improvement.

II. The exceptions above referred to are as follows:

A. A lien upon the buildings of a tenant owner, which is removable as between such tenant and his landlord, is not subject to any prior encumbrance upon the freehold, and may be sold and removed, by virtue of such building lien, free from such prior encumbrance upon the freehold.

B. A lien for alterations or repairs is not valid, as against a bona fide purchaser or mortgagee, whose rights accrued before such lien claim was filed in the county clerk's office.

C. The lien shall be subsequent and subject to any purchase money mortgage, given by the owner whose estate is liable to such lien, or by any his predecessor in title, to the extent that such mortgage is a purchase money mortgage, irrespective of the date when such mortgage may be recorded or registered.

Provided, that, at the time of such purchase, the estate purchased was not liable to such lien.

D. The lien shall be subsequent and subject to any advance money mortgage, given by the owner whose estate is liable to such lien, or by any of his predecessors in title, to the extent of the money actually advanced and paid by the mortgagee, or his assigns, in good faith, and applied to pay for labor or materials bestowed upon the building in respect of which the lien is claimed, and irrespective of whether such advances are made before or after the lien claim is filed, when the mortgagee has bound himself so to make them.

Provided, that, at the time such mortgage was delivered, the estate which it affected was not already, to the actual knowledge of the mortgagee, liable to such lien; and

Provided further, that such mortgage is recorded or registered before the claim for such lien is filed in the county clerk's office; and

Provided further, that the delivery of such mortgage, or its record or registration, has not been delayed for the purpose of prejudicing, and to the actual prejudice of, such lien claimant; of which purpose a delay of two weeks shall be *prima facie* evidence.

## Section 13.

I. After the claim for any lien given by this act as aforesaid is duly filed, the same may be enforced by an action at law which shall be brought only in the circuit court of the county where the lands which may be affected thereby are situated.

II. The owner may give any lien claimant notice in writing to begin a suit to enforce his lien claim within thirty days after such notice is given; and each claimant so notified must begin his said action at law in such period of thirty days.

Each claimant not so notified must begin his action at law within the period, as heretofore limited in this act, within which his lien claim might be filed.

If such action at law is not begun within the time in each case thus limited therefor, the lien of each claimant so in laches shall be discharged thereby, except as otherwise provided in the next paragraph of this section.

III. A lien claim shall not be discharged by delay in beginning action to enforce it when the institution and prosecution of such action would be idle and nugatory; or when the time therefor has been extended in the manner below specified and it is begun within such extended period.

In order to extend such time, there must be a written agreement therefor signed both by the claimant and the owner. Such agreement must be filed in the county clerk's office and the word, extended, entered in the margin of the lien docket opposite the entry of the original claim within the time in which suit on said claim should otherwise be begun; and the time last mentioned must not be extended thereby for a further period of over four months.

IV. Such action at law shall be begun by a summons with complaint annexed issued at the instance of said lien claimant, or of his executors or administrators in case of his intervening death, but actually to be sealed by the clerk of the circuit court, who shall forthwith endorse the fact and the date of the issuance thereof upon the plaintiff's lien claim on file in his office, and if no such endorsement be made, during the time within which such action must be begun, as aforesaid, each lien claim not so endorsed shall be thereby discharged.

V. The summons in said action shall summon, as defendants, the persons, as builder and owner, respectively named as such in the plaintiff's lien claim, and also, excepting building lien claimants, all encumbrancers and lienors whose encumbrances or liens, although of record before the plaintiff's lien claim was filed, are, nevertheless, subject to the lien claimed therein, and would be cut off by a sale thereunder; but in case of the death of any such builder, owner, lienor or encumbrancer prior to the issuance of such summons, it shall summon the proper representatives

of such deceased person, and said action shall be prosecuted and maintained against such representatives.

VI. The summons shall be framed in substantially the following form:

[Seal] The State of New Jersey.

To (state defendants' names and characters, as, for example) Richard Roe, builder; James White, owner; Hosea Ballon, attaching creditor; John Green, judgment creditor; Henry Smith, mortgagee:

You and each of you are summoned in an action at law in the circuit court of the county of ..... to answer the annexed complaint of the plaintiff, John Doe, and take notice,—

That the said John Doe, in his said annexed complaint, claims a building lien, for a debt due and owing to him from you, Richard Roe, builder, upon the building and lands in said complaint described of you, James White, owner; upon which said building and lands, you, Hosea Ballon, claim a lien by virtue of an attachment of record; you, John Green, claim a lien by virtue of a judgment of record, and you, Henry Smith, claim to hold a mortgage of record; and also take notice,—

That unless you file your answer to said complaint with the clerk of said court at ..... within twenty days after service upon you of this writ and the annexed complaint, the plaintiff may proceed in the suit and judgment may be entered against you.

Witness ..... Esquire, judge of our said circuit court at ..... in said county of ..... this ..... day of ....., Nineteen hundred and, etc.

VII. Said summons shall be tested as ordinary writs of summons out of said court are, and the plaintiff's complaint shall be annexed thereto, and served therewith, on each defendant who can be

found in any county within this state, by the sheriff of such county or other officer authorized by law to serve similar writs in lieu of such sheriff; and for such purpose as many duplicate originals of such summons and complaint (which may be marked as such) shall be issued as may be necessary.

VIII. The sheriff, or other such officers, shall make return, according to the usual course of practice upon similar process, and he shall also annex his affidavit, as to all the defendants returned by him as not found, stating his information and belief as to where they may be found, and whether within this state or not.

IX. When return has been made as aforesaid, that any defendant cannot be found within this state to be served, the plaintiff, or his attorney, shall forthwith proceed to bring in such absent defendant as follows:

A. He shall post upon the building, described in the complaint, a copy of such summons and complaint with a notice in substantially the following form thereunto annexed:

..... Circuit Court.

To (naming each such absent defendant):  
You are hereby notified that an action at law has been begun in the above entitled court by ..... against ..... (naming all the parties in said action), to enforce a lien claimed by the said ..... against certain buildings and lands of the said ..... which are located in the town (or as the case may be), in said county of ....., in the State of New Jersey.

And you, ....., are made a defendant because, as is alleged (stating as to each such absent defendant why he is made a party, as for example: You are the person who contracted the debt for which such lien is claimed; or you are the owner of the said building and lands; or you hold a mortgage

upon said building and lands which will be cut off by a sale thereof under said alleged lien, etc.)

And further take notice that, inasmuch as you have not been found within this state, to be served with process, you are required to appear and file your answer in said action with the clerk of said court within forty days after the date of this notice or the plaintiff may proceed in the suit and judgment may be entered against you.

Dated.

X. Y., Atty.,  
(Address.)

Such notice shall be dated and the name and address of the plaintiff's attorney, or of the plaintiff himself when he appears in his own behalf, shall be appended thereto.

It shall be posted as aforesaid within ten days after its said date.

B. Within said period of ten days last mentioned, the plaintiff or his attorney shall also mail to the address of each such absent defendant, if known, a copy or duplicate of said notice, with a copy of said summons and complaint annexed thereto; or, in lieu of such mailing, he shall, within said period of ten days, leave the same, or cause the same to be left, with each such absent defendant in person, or at his place of business or residence, if known, and

C. In case the residence, place of business, or address of such absent defendant is not known to the plaintiff, then, in lieu of the mailing or leaving above directed, a copy of said notice, but without the summons or complaint annexed, shall, within the said period of ten days, be published in some newspaper published or circulating in the county where the said building and lands are situated, and such publication shall be continued until said notice has been published in such newspaper once in each week for four successive weeks.

(To be continued.)

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Chicago Belting Co.  
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B. F. Goodrich & Co.  
Imperial Belting Co.  
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Webster Mfg. Company.  
Weller Mfg. Co.

## BRICK.

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Belden Brick Co.  
Hocking Valley Clay Co.  
Metropolitan Paving Brick Co.

## BRICK CLAMPS.

The P. D. Crane Co.

## BRICK PAVING.

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Harris Brick Co.  
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National Paving Brick Mfrs. Assoc.  
Thornton Fire Brick Co.

## BUCKETS, DUMPING AND GRAB.

Atlas Car & Mfg. Co.  
H. W. Caldwell & Co.  
Hendrick Mfg. Co.  
McMyler-Interstate Co.  
Owen Bucket Co.  
Willis Shaw Mch. Co.

## CABLES.

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Dull & Co., R. W.  
Sauerman Bros.

## CASTINGS.

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Taylor-Wharton Iron & Steel Co.

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## CEMENT, PORTLAND.

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Canada Cement Co.  
Carolina Portland Cement Co.  
Chicago Portland Cement Co.  
Coplay Cement Mfg. Co.  
Dexter Portland Cement Co.  
French, Samuel H., & Co.  
Giant Port. Cement Co.  
Kansas City Portland Cement Co.  
Lehigh Portland Cement Co.  
Marquette Cement Mfg. Co.  
Northwestern States Portland Cement Co.  
Ohio & Western Lime Co.  
Peerless Port. Cement Co.  
Phoenix Portland Cement Co.  
Sandusky Portland Cement Co.  
St. Louis Portland Cement Works.  
Security Cement & Lime Co.  
Union Sand & Material Co.  
Universal Portland Cement Co.  
Vulcanite Portland Cement Co.  
Whitehall Portland Cement Mfg. Co.  
Wolverine Portland Cement Co.  
Woodville Lime & Cement Co., The.

## CHAINS.

Edgar Allen Amer. Mang. Steel Co.  
Columbus Chain Co., The.  
Jeffrey Mfg. Co.  
Taylor-Wharton Iron & Steel Co.

## CLAY AND FIRE CLAY.

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Kewanee Mfg. Co.

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Clinton Metallic Paint Co.  
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Dull, Raymond W., & Co.  
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Good Roads Mach. Co., The.  
Jeffrey Manufacturing Co.  
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Butterworth & Lowe.  
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Good Roads Mach. Co., The.  
Gruendler Patent Crusher & Pulverizer Co.  
Jeffrey Manufacturing Co.  
Kent Mill Co.  
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Martin, Henry.  
McLanahan Stone Machine Co.  
Pennsylvania Crusher Co.  
Power & Mining Mach. Co.  
Raymond Impact Pulverizer Co.  
Symons Brothers.  
Sturtevant Mill Co.  
Taylor-Wharton Iron & Steel Co.  
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American Clay Co.  
Evans Clay Mfg. Co.  
Mason City Brick & Tile Co.

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Armstrong Mfg. Co.  
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Howells Mining Drill Co.  
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Duff Patents Co., Inc.  
Dull, Raymond W., & Co.  
Fuller Engineering Co.  
Grimsley, G. P.  
Robt. W. Hunt & Co.  
Improved Equipment Co.  
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Lewis, W. J., & Co.  
Meade, R. K.  
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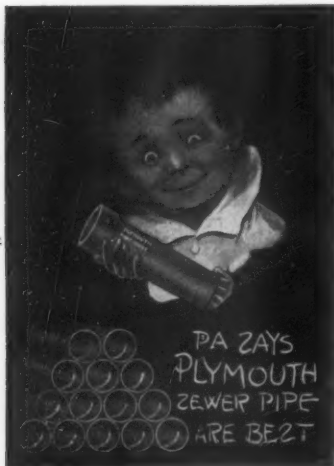
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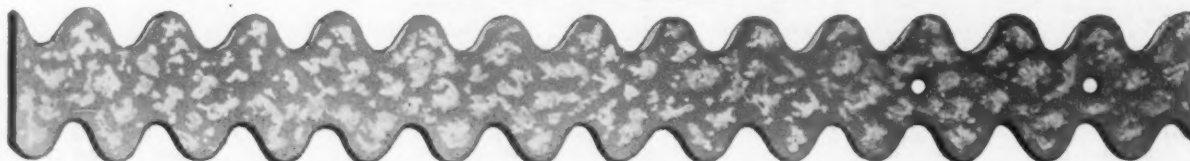
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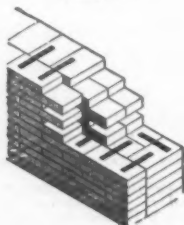
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We shall be pleased to mail you samples.

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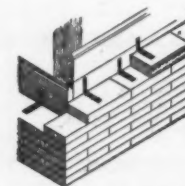


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# KISSELKAR TRUCKS

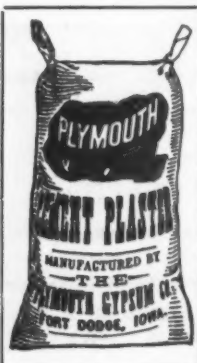
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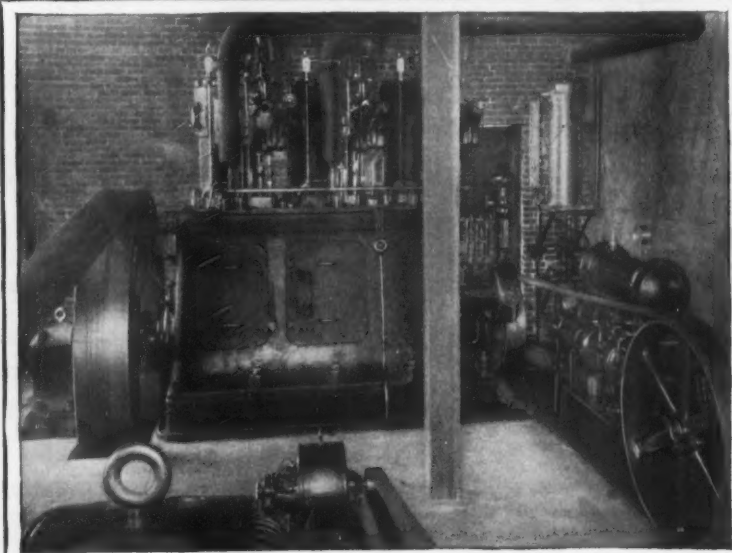
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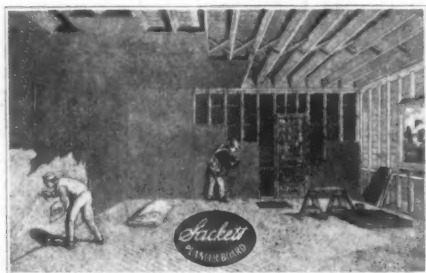
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